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Original Articles.

THE MAJOR OBSTETRICAL OPERATIONS.

FROM THE STANDPOINT OF THE GENERAL PRACTITIONER WITH A TABULAR REPORT OF TWENTY-THREE CONSECUTIVE SUCCESSFUL CASES.*

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GENERAL PRINCIPLES.

The recent advances in the study of the contracted pelvis, and the possibility of saving fetal life in such cases, by the extension of the major operations to a wider field, have as yet been confined too exclusively to the practice of professed obstetricians, and too little popularized among the great mass of the profession; perhaps because it has been thought by many that the technicalities involved in the detection of contraction are too great for the general practitioner's use, and probably because there is still too much credence for the former erroneous idea of the comparative scarcity of contraction in America. This belief must, however, be given up. The results of all those who have recently investigated the subject having yielded about the same percentages of contraction, namely, about 11 per cent., if we except the negroes, in whom it rises to nearly 20 per cent. Only about 2 per cent., however, reach the degree of mechanical obstruction which demands operation; but when we consider that in each of these cases the question of whether the woman shall be delivered by one of the ordinary methods or by a cutting operation, must necessarily be raised, even this percentage is surely large enough to make the question one of living importance to every general practitioner.

The operations to be considered in any such cases are forceps and version, the induction of premature labor, craniotomy, the Cesarean section with or without the extirpation of the uterus, and symphysiotomy. The choice between them must always be determined by a consideration of their respective maternal and fetal mortality, under the conditions of the individual case. The short time allotted makes it impossible for me to discuss in detail both the status of all these operations and their application to practice, and as I have recently published[1] a detailed paper on the status of the cutting operations, I propose to limit myself here to a bare statement of the mortalities, unsupported by argument, in order to afford myself room for a full discussion of the application of these results to everyday practice.

As an essential preliminary to any intelligent consideration of these mortalities, we should first, and for each operation, subbivide the cases into favorable and unfavorable classes, putting in the favorable class all those in which at the time of operation the woman is uninfected, not exhausted by long labor, and free from complicating diseases; and per contra, into the unfavorable class, all cases in which the woman is already exhausted by neglected labor, infection, or other intercurrent disease.

FORCEPS AND VERSION FOR CONTRACTED PELVIS.

It will, I think, be conceded by any obstetrician of wide experience, that the use of high forceps and version for contracted pelvis has a small *intrinsic maternal* mortality, yet we shall find that this maternal mortality is insignificant or non-existent in the hands of skilful men and when the operations are undertaken with the mother in thoroughly good condition, but that it will not be insignificant in the unfavorable class of cases.

It is generally and somewhat loosely held that the fetal mortality of high forceps and version is not unduly large, but I think any one who will analyze a large series of cases with regard to this point, will be surprised to find how large the fetal mortality is. I have myself found that analyses both of my own experience, and of a considerable number of reported series of cases, have uniformly yielded about the same result, that is, a *fetal mortality of not less than 50 per cent., in cases* in which high forceps or version was performed on account of contracted pelvis. (We must, of course, exclude cases in which these operations are done for less important mechanical obstacles; in which cases the fetal mortality is naturally much smaller.)

INDUCTION OF PREMATURE LABOR FOR CONTRACTED PELVIS.

In these aseptic days the maternal mortality of the induction of labor is and should remain exceedingly small, but in this class of inductions the reported fetal mortality is far from small, being about 50 per cent.;[2] *a statistical* result which is, moreover, supported by the opinion expressed in the more recent text-books.

CRANIOTOMY.

Since craniotomy to the living child is practically never performed until after the failure of determined attempts at extraction by high forceps and version, its maternal mortality is necessarily a little higher than where these operations succeed. Its fetal mortality is, of course, 100 per cent.

THE CLASSICAL CESAREAN SECTION.

Until very recently, it has been generally held that the maternal mortality of the Cesarean section was still not less than 25 per cent., and if all the reported cases are considered together this opinion is probably a true one, but a division of the cases into the favorable and unfavorable classes, defined above, yields surprisingly different results. Thus an analysis which I made a year ago of 150 reported cases, 15 of my own and the remainder from foreign sources, shows that there were 89 cases in the favorable, and 61 in the unfavorable class.[2] Among the 89 favorable cases there was no maternal mortality, while the mortality of the unfavorable cases reached the prohibitive figure of 33.3 per cent.

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* Read before the Obstetrical Section of the New York State Medical Association.

[1] Obstetrics, January, 1900.

[2] Estimating an unduly prolonged labor at the arbitrary limit of twenty-four hours.

The fetal mortality of the Cesarean section is, of course, the smallest mortality known, amounting to nothing in the favorable class of cases.

PORRO'S OPERATION.

This extirpation of the pregnant uterus has been almost invariably confined to the unfavorable class of cases. There is perhaps not yet enough material for estimating its maternal mortality when done early in labor and in selected cases. It is probably but slightly *greater than that of the uncomplicated section.* Its mortality in the unfavorable cases is somewhat lower than that of the Sänger section, but reaches about 30 per cent. Its fetal mortality is that of the Cesarean section, that is, it is never fatal to a child which is in good condition at the time the operation is undertaken.

SYMPHYSIOTOMY.

When the reported cases of symphysiotomy are separated into the favorable and unfavorable classes, the operation is found to have a somewhat larger maternal mortality than the section in the first set of cases, those in which women were in good condition, the small mortality which exists being due to an occasional improper selection of cases, that is, to the performance of symphysiotomy in pelves of too high a degree of contraction to admit of easy extraction after it had been performed. Its fetal mortality is practically confined to the same mistaken cases; but, though this is a mortality of mistake, the fact that it has been frequently made by men of world-wide reputation makes it necessary to consider it. In contrasting symphysiotomy with the classical Cesarean section in the favorable class of cases, it must, moreover, be remembered that even if it attains an equally low maternal mortality, its morbidity is considerably higher than that of Cesarean section, that is, serious injuries to the soft parts occur not infrequently, and loss of locomotive ability from permanent mobility of the pelvic bones is not unknown. In the unfavorable class of cases, however, the maternal and fetal mortality of symphysiotomy both compare favorably with those of any other operation, and, in my opinion, it here finds its chief indication. It is unattended by shock; it does not open the genital canal, and can therefore be performed in infected cases; it makes the subsequent extraction by forceps or version easy instead of difficult.

CONCLUSIONS.

The conclusions to which I have been forced by my study of the subject, which have since been supported by the results of every reported case that has come under my observation, and which have led me to an unbroken success in dealing with all the major cases that I have seen since I finally formulated them—23 cases in four years—are as follows:

1. When the conditions are such that the child can be delivered with anything like reasonable ease by forceps or version, one of these operations is preferable to any cutting operation.

2. When the mechanical relations would render forceps or version unusually difficult, forcible and prolonged, and when the mother is in the favorable class, the equally low maternal mortality and the far lower fetal mortality of the Cesarean section render it the operation of choice.

3. When the mechanical conditions make the intrapelvic delivery of an intact child at term impossible or unduly difficult, the great superiority of the Cesarean section over the induction of premature labor in fetal mortality, and its extremely low maternal mortality render it again the preferable operation.

4. When the ordinary operations fail and the woman is in the unfavorable class, symphysiotomy is the operation of choice, and may be expected to lead to a favorable result for both mother and child in the great majority of cases, provided always that the degree of mechanical difficulty permits of its application.

5. When in the unfavorable class of cases, the degree of relative disproportion between head and pelvis is too great to admit of a safe symphysiotomy, craniotomy to the living child should be unhesitatingly chosen, since the maternal mortaliy of either form of the section is so enormous, and because I can not doubt that the life of the potential mother of many children is of more value than that of any unborn fetus.

APPLICATION TO PRACTICE.

If these principles be true, it follows that there are but few, if any, cases of uncomplicated mechanical obstruction in which a happy outcome for both mother and child is not easily within the power of ideally prompt and intelligent medical care, if applied at the beginning of labor. I believe this to be a fact and I think that this happy state of affairs is sufficiently possible of accomplishment to encourage us in every effort toward its attainment. The method which is commonly laid down *as a necessity to this end is the routine measurement of every case at the time it first comes under the practitioner's care.* I am far from underestimating the value of routine pelvimetry, and hope to see the day when it will be a part of every obstetric examination, but I believe that there is no use in disguising from ourselves the fact that it is not now, and for the present is not likely to be, generally practiced; if only from the fact that the attainment of an accurate conception of the mechanical possibilities of a given pelvis by mensuration is not an easy matter to any one, and that, moreover, the active general practitioner of to-day has not been educated in it, and can hardly be expected to perfect himself in this particular. The popularization of pelvimetry must be expected from the graduation of students who have been carefully taught it during their course in the medical schools. Valuable as mensuration is, moreover, it is fortunately not essential to the attainment of very fair results in mechanically obstructed labor. Every day of increasing experience makes it more certain that the supreme test of the adaptation between head and pelvis is the test of actual labor, and that the all-important thing is the clinical recognition of a mechanical obstruction early in the course of labor. The variations in the size and hardness of the fetal head are so great that there are, in my opinion, few cases of contracted pelvis in which any one is justified in performing a major operation without applying to the case the supreme test of an actual labor, or the history of past labors; and this clinical test is easily within reach of the general practitioner if he will conceive the case properly. Let us then discuss his duty in the course of his care of pregnancy and labor, from the standpoint of the cruder methods which are possible to everyone.

The importance which attaches to the actual clinical test necessarily places primiparæ and multiparæ in widely different clinical classes, and it is natural to discuss the primiparæ first.

PRIMIPARAE.

I would, then, advise the general practitioner that when a primipara comes under his care during the course of pregnancy, he should always include the possibility of marked mechanical obstacles as among the contingencies to be considered in his mental estimate of the case. If the woman be especially small, if she has a history of early caries, either of the hip or spine, or if any other symptoms point to a possible dystocia, he should take her to an expert for the estimation of the size of the pelvis, in consultation, early in pregnancy, precisely as he would treat any other certain grave surgical complication in his practice. Even if no such threatening symptoms exist, he should, preferably a few weeks before labor, and at all events at his first visit in labor, notice whether or not the head is unusually high. This, though not ideal, is, I think, the best test which we can expect at present to have applied to general practice in the case of primiparæ; it is, moreover, a fairly good one. If the head is, at the beginning of labor, well crowded down into the brim it will very rarely if ever happen that the case is beyond a possible delivery by forceps, and if such a delivery results fatally to the child, the question of choice of operations can be taken up at the next pregnancy. On the other hand, if in a primipara with the rigid abdominal and uterine walls which belong to her condition, the head is at the beginning of labor high above the brim, the question of serious relative disproportion between the head and pelvis is always prominent. The point which must now be remembered is that the chance for a successful Cesarean section is limited to the early part of labor and that the choice must be made then and can not be deferred to a later time. What the practitioner should do in such a case must depend on varying factors, such, for instance, as his methods of practice, his relation to the individual patient, and the locality in which his practice is situated. He may choose between an immediate and careful measurement of the pelvis, externally and internally, himself, if he feels competent for it, or an immediate consultation with an expert, not necessarily on the subject of an immediate delivery, but on the question of whether there is a sufficiency of room; and this consultation will seldom be objected to by the family if it is put before them in this way. If a contraction of the pelvis is found, preparations for a section should be made on the chance that its performance may be necessary. If then the dilatation of the os progresses with fair rapidity and without the appearance of any exhaustion of the patient, nothing is done until toward the termination of the first stage. If the first stage is tedious and exhausting, the patient is etherized while still in good condition and the os gently dilated manually. The hand is then passed into the pelvis, under anesthesia, of course, and made to palpate and measure it with the greatest care; it is next passed up to palpate the head, both to ascertain its size and the relation which its greatest diameter bears to the pelvic brim when it is strongly crowded down into the pelvis by a suprapubic hand. If this test is inconclusive, the forceps are applied to the sides of the head with the greatest care and a few gentle tractions made in order to determine the amount of resistance which is to be expected, and to study the application of the individual head to the individual pelvis by the introduction of the fingers alongside the forceps during the tractions. At the same time the fetal heart is carefully watched to judge of the effect of the tractions on the child. It is manifest that this method of studying the case requires an extended obstetrical experience for a due appreciation of its results, and I believe that in case of doubt the decision should be given in favor of the lesser operation, in primiparæ at all events, since in the present state of our knowledge it is better that we should risk losing one child than perform an unnecessary Cesarean section; but with due care and caution and in sufficiently skilled hands, I believe that this test will yield nearly certain results, and that the doubtful cases will consequently be rare. I believe that the adoption of this simple rule —that an unusually high or inaccessible position of the head at the beginning of labor should be regarded as ground for a consultation—will lead to greatly improved results.

In the present condition of medical practice we can not doubt that the children of primiparæ will occasionally be lost, who might have been saved by an early resort to a cutting operation, and that symphysiotomy will be done in other cases where the preferable Cesarean section might have been selected had the gravity of the case recognized earlier; but when the primipara has become a multipara, the case is much more simple.

MULTIPARAE.

Once the general practitioner realizes what the public is already beginning to know, that the loss of a child in labor from mechanical obstacle is a loss which might probably have been avoided; once he recognizes what will, in my opinion, before many years be recognized by the profession far and wide, that the mortality and morbidity of the major operations done at the beginning of labor are no greater and probably less than those of violent and prolonged forceps extraction, very few children of multiparæ will owe their death to any mechanical cause. The rule which will save them is again a simple one. When a woman has once lost a child in labor from mechanical obstacle, that is, from difficult delivery by forceps or version, the question of a major operation at term should always be taken up during the next pregnancy of that woman, that is, a consultation should be held, at latest a few weeks before delivery. The pelvis will then be measured and the relative size of the pelvis and the individual head will be estimated by the hand. If distinct disproportion already exists, the case may conceivably be treated by Cesarean section at the beginning of labor, or at a date set just before it. In a larger number of cases, the estimation of relative size will be repeated at term and the woman will be allowed to go through the earlier hours of labor, but with every preparation for the performance of a Cesarean section already made, and with an operator at hand, so that in the event of another failure of the powers of nature the favorable moment can be seized and another fetal death in labor avoided.

Is not all this a simple and rational application of our recent advances to ordinary general practice? It may be objected that I have insisted too much on the employment of an expert wherever the question of relative disproportion is a prominent one. I would reply that every great advance works harm by the over-enthusiasm and rashness of the ill-prepared. That the decision in favor of or against a major operation in a given case is, in my opinion, in most cases, a very delicate and difficult one: one which should be submitted to a man with a professed proficiency in the subject. Obstetrics is rapidly reaching a position in which its

No.	Name.	Birthplace	Patient of—	Age.	Married or Single.	Number of Confinement.	Previous Labors.	Date.	Pelvis.	True Conjugate.	First Seen When	Weight of Child,	Operated upon During Labor.	Presentation and Position.
1	R. R.[1]	Massachusetts	Boston Lying-in Hospital	38	Single	1	None	July 26, 1896	Pelvic Nana	7 cm	6 months	3 ℔, 10 ozs	During labor	Transvers, not given
2	K. P.	Massachusetts	" " "	32	Married	3	First, 1896; forceps—stillborn. Second, 1897; induction at six months—child died.	Sept. 10, 1896	Justo-minor	9 cm	6 months	8℔, 1 oz	Elected date	Vertex, not given.
3	M. R.	Ireland	" " "	26	"	4	First, August, 1892; forceps—child alive. Second, January, 1893; forceps—child lived ten minutes. Third, April, 1896; prolapsed cord—stillborn.	Aug. 6, 1897	Justo-minor	9 cm	4 months	8℔, 2 ozs	During labor	Vertex O. L. A.
4	K. R.	Massachusetts	" " "	28	"	3	First, 1894; forceps—child born dead. Second, 1895; forceps—child born dead.	Sept. 30, 1897	Justo-minor.	8.5 cm	4.5 mos	7℔, 4 ozs	" "	" "
5	L. S.	Massachusetts	" " "	23	"	2	First, November, 1896; spontaneous at seven months child lived eight months.	Jan. 16, 1898	Oblique Kyphotic	8 cm	At term	7℔, 4 ozs.	Elected date	" "
6	Mrs. W.	Massachusetts	Referred by Dr E. T. Galligan	37	"	2	First, March, 1898; forceps (by E. R.)—dangerously hard pulling; child 7½ pounds; badly marked but living.	Mar. 24, 1898	Justo-minor.	8.5 cm	2 months	8℔.	During labor	" "
7	D. F.	Germany	Boston Lying-in Hospital	24	Widow	2	First, 1896; high forceps—child lost in labor	April 11, 1898	Generally contracted, flat.	8.5 cm	8.5 mos	8℔, 4 ozs.	" "	" "
8	M McH	Ireland	" " "	26	Married	2	First, May, 1897; high forceps.	July 17, 1898	Justo-minor.	8 cm	At term	8℔.	" "	Not given.
9	V. McM	Massachusetts	" " "	24	Single	1	None	Mar. 22, 1899	Generally contracted, flat.	7.5 cm.	At term	6℔, 8 ozs	" "	Vertex O. L. A.
10	F. S.	Russia	" " "	27	Married	5	First Feb. 7, 1887; craniotomy. Second, April, 1888; Induced labor eight months—child died. Third, January, 1890; premature delivery—child died. Fourth; craniotomy; version; rupture of uterus; peritonitis.	April 2, 1899	Justo-minor.	7.5 cm	5 months	8℔, 9 ozs	" "	S. L. A. breech
11	Mrs. W	Massachusetts	Seen with Drs. C. W. Townsend and W. A. Putnam	28	"	2	First, Aug. 18, 1896; craniotomy	June 5, 1899	Justo-minor.	Not taken[2]	At term	8℔, 8 ozs	" "	Not noted.
12	A. P.	Massachusetts	Seen with Dr. O. E. Johnson.	38	"	1	None	July 18, 1899	Justo-minor.	8 cm	At term	7℔.	" "	O. L. A.
13	H. B. K	Massachusetts	Seen with Dr. J. P. Torrey.	29	"	1	None	Oct. 18, 1899	Justo-minor.	8.5 cm	5 months	10℔	" "	Not noted.
14	K. R.	Massachusetts	Boston Lying-in Hospital	30	"	4	Third, 1879; Cesarean section. (Case 4 above).	Dec. 27, 1899	Justo-minor.	8.5 cm	6 months	7℔, 8 oz.	Elected date	Vertex O. L. A.
15	K. D	Ireland	" " "	38	"	8	Three miscarriages; four full-term pregnancies (1889, 1891, 1892, 1896), all still-born.	July 9, 1898	Generally contracted, flat.	8.5 cm	In labor.	8℔, 6 ozs	During labor	Vertex O. D. P.
16	M. M.	Ireland	" " "	35	"	4	First, February, 1884; forceps—child living. Second, 1886; Still-born. Third, 1897; miscarriage (3 mos.).	July 25, 1898		Meas. not recorded.	In labor.	9℔, 8 ozs	" "	" "
17	M. M	Ireland	" " "	35	"	5	First, February, 1884; forceps living. Second, 1896; forceps—living. Third, February, 1897; miscarriage at three months. Fourth, July, 1898; symphysiotomy (Case 16 above); high forceps.	*June 15, 1900*	*Not recorded.*	Not recorded.	*In labor.*	8℔, 12 ozs	" "	Vertex.
18	L. L.	Italy	" " "	41	"	9	All operative; high forceps and version	Jan. 11, 1900	Generally contracted.	8.5 in	In labor.	8℔	" "	Vertex O. D. P.
19	E. R.	Nova Scotia	" " "	25	"	1	None	June 18, 1900	Generally contracted.	8.5 cm	In labor.	7℔, 11 ozs.	" "	" "
20	L. S.[3]	Boston	" " "	24	"	3	First, November, 1896; premature at seven months. Second, January, 1898. Cesarean section (B. L. H.) (C. R.) (Case 5, above)—child living.	June 20, 1900	Oblique Kyphotic	8.5 cm	At term	6℔, 2 oz.	" "	Vertex.
21	J. W.[4]	Boston	" " "	26	"	1	None	Sept. 10, 1900	Oblique.		At term	8℔.	" "	Vertex O. L. A.
22	A. C.	Ireland	" " "	24	Single	1	None	Sept. 28, 1900	Generally contracted, flat.	7.5 cm	At term	6℔, 5 ozs	" "	Vertex O. D. P.

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[1] An idiotic Cretin dwarf, whose development was both mentally and physically about that of a 3-year-old child.

[2] External measurements all small. Previous labor had been a craniotomy by an expert obstetrician, and this labor was seen with the same gentleman, who had examined and found the head wholly disproportioned to the pelvis. He was prevented by the head from measuring the conjugate. I made no vaginal examination. The child proved much larger than the former one.

[3] No. 20 had hip-disease at 14, with shortening of right leg and fixation.

[4] No. 21 had hip-disease when a child. Left leg adducted and hip-joint anchylosed.

No.	Operation.	Length of Labor Before Operation.	Previous Operative Measures.	Abdominal Sutures.	Uterine Sutures.	Ergot.	Cervical Drain.	Length of Operation.	Convalescence.	Sat up. Day.	Nursed.	Child.	Result.	
													Mother.	Child.
1	Cesarean Section	Uncertain, os size of 10-cent piece.	None	Through and through silk worm gut.	Interrupted; braided silk in two layers.	Subcutaneously	Gauze..	29 min, 15 sec	Interrupted by sloughing about subcutaneous punctures.	29th..	No .	Male .	Well	Died; hereditary weakness.
2	" "	None...	None	" " "	Interrupted; braided silk in two layers,	" "	" .	42.5 min.	Nervous and apprehensive; pain in chest; otherwise normal.	23d .	Yes.	Female	"	Well
3	" "	19 hours.	Tentative traction with high forceps.	" " "	Interrupted; medium twisted silk with fine silk seroserous coaptation stitches.	" " twice.	None...	31 min.	Normal..	27th .	"	Male .	"	"
4	" "	11 hours.	High forceps failed	" " "	Interrupted; braided silk in two layers.	Subcutaneously.	" .	45 min..	Severe after pains; some distention and flatulence till cathartic on 2d day.	24th .	"	" .	"	"
5	" "	None...	None...	" " "	Interrupted twisted silk, with fine silk seroserous coaptation stitches.	" " twice.	" .	40 min..	Uneventful	21st .	"	" .	"	"
6	" "	5 hours	Tentative forceps	" " "	Interrupted medium twisted silk with fine silk seroserous coaptation stitches.	Subcutaneously.	" .	Not taken	Normal..	22d .	"	" .	"	"
7	" "	6 hours and 40 minutes.	None...	" " "	Interrupted medium twisted silk with fine silk seroserous coaptation stitches.	" "	" .	28 min..	Normal except for troublesome cough present before operation.	29th .	"	" .	"	"
8	" "	3 hours	None...	" " "	Interrupted twisted silk with fine silk seroserous coaptation stitches.	" "	" .	26 min..	Normal	20th	"	Female	"	"
9	" "	14 hours and 35 minutes.	None...	" " "	No. 8 twisted silk down to endometrium; running sutures of fine twisted silk for uterine peritoneum.	" "	" .	35 min.. 35 sec.	Slight pyrexia. No cause developed.	29th .	"	" .	"	"
10	" "	7 hours	None...	" " "	Through and through silk with fine seroserous coaptation stitches.	" "	" .	44 min.	Normal..	23d .	"	Male .	"	"
11	" "	30 hours mild, 6 hours good	None...	" " "	Silvered silk	" "	" .	Not taken	" "	30th .	No .	Female	"	"
12	" "	18 hours.	Tentative forceps	" " "	" "	" "	" .	" "	Normal. Some tympanites	Abo't 18th .	Yes .	" "	"	"
13	" "	2 hours	" "	" " "	" "	" "	" .	" "	Normal..	21st .	"	Male .	"	"
14	" "	None...	None...	" " "	Twisted silk	" "	" .	40 min..	" "	23d .	"	Female	"	"
15	Symphysiotomy	9 hours	Manual dilatation and prolonged *high forceps* before entrance.	" " "	Not given	By mouth		Not taken " "	Obstetric sepsis. Wound normal.		No .	" "	"	Died of fracture of skull
16	" "	20 hours	High forceps failed	" " "	Not given..	" "	Unstated	Not taken	Normal..		Yes..	" "	"	Well
17	" "	Probably in second stage	None...	" " "	Not given..	" "	None...	" "	" "	28th .	"	" "	"	"
18	Cesarean section	None..	None	" " "	Interrupted fine twisted silk.	Subcutaneously.	None...	27 min..	" "	25th .	"	Male .	"	"
19	" "	1 hour and 30 minutes.	None...	" " "	Interrupted fine silk.	" "	" .	29 min..	Phlebitis in left leg and slight attack of grippe	70th .	"	" .	"	"
20	" "	None...	None...	" " "	Interrupted fine twisted silk.	" "	" .	31 min..	Normal..	26th .	"	Female	"	"
21	" "	hours	None...	" " "	Interrupted fine silk..	" "	" .	33 min..	Normal.	25th .	"	Male	Well	Well
22	" "	19 hours and 30 minutes.	None...	" " "	Interrupted fine twisted silk.	" "	" .	39 min..	Difficult; severe pain, much distention until catharsis on 2d day; some pyrexia; mild delusion at times.	21st .	"	Female	Well	

best exponents are able to exhibit as definite results as are obtained in other branches of modern surgery, and I believe that the profession will before many years be compelled by the public to feel its obstetrical responsibilities with the same seriousness which has long been accorded to surgery. Once the public and the general practitioner feel that almost every fetal death from mechanical obstacle must be charged to the want of exceptional skill on the part of the attendant, we shall have far fewer deaths in labor. In every large city the men who are ready to consider this question are plentiful, and when cases of the sort occur at a distance from such a center they must be settled by the best man accessible.

I wish finally to repeat my firm belief that in all cases of doubt we should be guided by the general proposition that a manufactory is always of greater value than any single sample of its products, and that the potential mother of many children is always of more value than a single child; though I believe that in well-handled cases the interests of mother and child are to-day almost invariably identical. In illustration of the position which I am supporting I wish to close my paper with a short history of the twelfth case on my list, one which illustrates unusually well that position.

Early in the winter of 1898 and 1899, Dr. O. F. Johnson, of Winthrop, Mass., wrote to me that he had a primiparous patient whose small size had led him to apprehend difficulty in labor, a fear which had been encouraged by the slightly small external measurements which he had taken. He informed me of the calculated date of delivery, and asked that I would make a note of it and come to his assistance prepared for any method of delivery if the early part of labor did not progress satisfactorily. On July 18, 1899, he telephoned me that the patient was in labor, and later in the day telephoned that the progress of labor was not quite satisfactory to him, and asked me to see her. I went at once, prepared with assistants and instruments for any form of delivery, including the Cesarean section. The patient was a primipara, fifteen years married, and a very small woman. She had had moderate labor pains for about eighteen hours, but was in excellent condition, with slow pulse, and not exhausted. The membranes were unruptured, the os about the size of a fifty-cent piece. The pelvis measurements were as follows: Spines of the ilium 21 cm.; iliac crests 26 cm.; external conjugate 18 cm.; diagonal conjugate 9.5 cm. The symphysis was erect, the promontory high, the form of the pelvis justo-minor, and I estimated the true conjugate at not over 8 cm. It was thus decidedly a small pelvis, but on dilating the os, which was done with greatest ease, the patient being under ether, and seizing the child's head with the hand, it was evident that the head was not large, the fontanelles and sutures were wide, the bones were soft, and I was inclined to believe that an intrapelvic delivery was possible. The occiput was anterior, O. L. A. I easily applied the forceps and easily brought the head into the brim, but two strong tractions failed to advance it farther, and on listening to the fetal heart, which had previously been strong and regular, I failed to hear it. The forceps were at once removed, the head pushed back and the hand passed into the uterus in search of the cord, which was found to be beating faintly and intermittently. I felt that even the few tractions which I had made had been too powerful for the soft head and feared that I had lost the child, but after a few minutes spent in watching the cord with the fingers its pulsations became good and regular, having steadily improved during the interval. The hand was then removed, and some minutes spent in watching the fetal heart with the stethoscope. It continued good and strong. The child's condition was evidently re-established, and as the mother's pulse was slow and good, and I was confident I had done no harm to the soft tissues with the forceps, I felt warranted in still considering the Cesarean section. I informed the doctor and the husband that I had no question that I could deliver an intact child by forceps without material danger to the mother, but I was equally sure that the child would be a dead one, and that I thought the Cesarean section could be performed without essentially increasing the risk to the mother. Both of them assenting, my assistants were called up, the necessary preparations rapidly made, and a classical Cesarean section done. The child had passed meconium into the liquor amnii and was somewhat asphyxiated, but was resuscitated without great difficulty and has done thoroughly well ever since. The mother's recovery was uneventful. I criticise myself as having in this case gone a little too far in the use of forceps in so small a pelvis, but I believe if a mistake is made it is better to make it on the side of conservatism, and I hoped to be able to deliver safely with forceps. The case is, with this exception, a fair illustration of what I consider a rational method of deciding between the Cesarean section and the forceps.

TREATMENT OF SESSILE AND CERTAIN OTHER OVARIAN CYSTS.*

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Other things being equal, our operative methods should follow lines which involve a minimum of injury to important structures, the greatest preservation of tissue, including the blood, and the least amount of shock possible.

The question at issue is whether in dealing with some of the cysts under consideration we might not obtain the same results with less radical measures, and therefore with less risk to the life of the patient. The object then, of this paper, is to give the clinical results of a method that is simple, applicable in a certain percentage of these cases, and so far as I know not usually employed and to call attention to the success of the same plan in similar pathologic conditions in other organs.

The non-pedicular cysts of the female adnexa as a rule develop either from the ovary—paroöphoron—or the parovarium; for the most part they grow between the layers of the broad ligaments and thus are in intimate relation with the cellular tissue, vessels, ureter and bladder beneath and in front, the muscular and serous coats of the broad ligaments and ovary on the sides, the superimposed tube and peritoneum above.

The parovarian cyst is usually unilocular; when small the walls are exceedingly thin and transparent and the fluid contents limpid and sterile; as the tumor increases in size the epithelial lining undergoes change, the walls become thicker, more dense, and slightly opaque, while the fluid becomes turbid, but usually remains sterile. These cysts develop from the paroöphoron and parovarium as a result of the stimulation due to the advent of puberty (Sutton), and are often mistaken for oöphoron cysts and so treated. As stated, they grow within the mesosalpinx and are thus literally part subperitoneal and part intraligamentous. If the development is upward the tube becomes quite tense, so that its lumen may be occluded and its function destroyed; if downward, it may simply displace the ligamentous structures, lying imbedded in a sac of dense connective tissue, from which it may be readily enucleated, or become intimately associated with these structures and thus be difficult of removal.

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* Read before the Los Angeles Medical Society, June 1, 1900.

After removal, in the former case we may simply have to deal with a dead space; in the latter a formidable hemorrhage, injured structures and a veritable cavity are the conditions which may either endanger the patient's life or protract convalescence by the defect becoming an infection atrium, or a circumscribed pus sac. In some of these cases, especially those which show signs of malignacy and some multilocular cysts, ligation of the ovarian and uterine vessels previous to enucleation is quite imperative, and in these the obliteration of the undisturbed sac would be impracticable, but in the monocysts and non-malignant growths, even if hemorrhage is controlled by previous ligation, the patient still does not escape the danger of injury to the ureter and bladder, either in the enucleation of the tumor or the obliteration of the sac, and if the latter be impossible it may only be successfully drained per vaginam; in which case, in spite of our best efforts it usually becomes infected before it is completely closed. This infection is protracted because of the dead space that necessarily is formed by the removal of the cyst and which is not effaced by approximation of the broad ligaments; in endeavoring to bring these together the task becomes both difficult and dangerous because the growths, frequently displace and deform the contiguous structures to such a degree that it becomes almost impossible to recognize them by anatomical differentiation.

It seems to me, therefore, that the proposition becomes simpler, if, instead of trying to enucleate these cysts, we should instead, after having carefully evacuated the cyst contents and removed the redundant portions of the wall, destroy the lining by the use of proper escharotics and close the orifice by suture.

The cautery or the curette is sometimes advised in the most difficult cases, but reasoning from analogy the hyperstimulation resulting from chemical irritation would accomplish all that is necessary and yet be attended with less danger. The result of such application is the destruction of the epithelial or other structural layer of the cysts by albuminous coagulation which subsequently liquefies and is absorbed, leaving a sterile dead space, or by connective-tissue proliferation becomes obliterated through adhesive inflammation.

A resultant dead space is not an unnatural termination under the circumstances, for while Nature naturally abhors a cavity, nevertheless we frequently find an unoccupied sterile pleural cavity owing to a collapsed and adherent lung, or spaces of varying size in the soft tissues due primarily to pressure necrosis and subsequent absorption, owing to the presence of some metallic or other foreign substance. In an unusually thick sac, in which fatty degeneration does not occur, it is quite natural to suppose that after dehydration, the tissue would undergo mummification similar to the papyraceous ectopic ovum. There need be no fear in leaving a portion of the sac, since in extensive intestinal adhesions to an ovarian cyst or other neoplasm, if separation of the intestines produces serious trauma, the adherent portion is frequently left without serious results.

In the commonly accepted treatment of hydrocele, glandular and simple unremovable congenital or retention cysts, whether by the aseptic open method or the injection of tincture of iodin, or carbolic acid with the adhesive obliteration of the sac, we have the analogue of the method suggested in dealing with the cysts under discussion.

The disposition of an ovarian cyst, whether pedunculated or sessile, without resorting to the usual manipulation of adjacent organs which is frequently necessary in ligation or enucleation seems of still greater value when coexistent with pregnancy. While gentleness is required in all intra-abdominal manipulations, still, in handling the gravid uterus, we can not be too careful, and yet in spite of the greatest precautions in endeavoring to ligate a pedicle or enucleate a cyst it may become so displaced that in recovering its position, or in becoming adjusted to its environment, forces may be excited that eventually result in premature labor. It seems that here also the obliteration of at least a portion of the sac, in view of the fact that it could be done with less disturbance of the viscera, especially if the blood-vessels were not unusually large, would be the preferable operation. I believe, moreover, that the complication of premature labor which so frequently follows operation in these case, is due not primarily to the operation per se, assuming that there has been no infection, but as has already been suggested, to the readjustment which necessarily takes place in the restoration of the uterus subsequent to the removal of the cyst, whether that readjustment be a return to the position which it previously held and from which it was disturbed by our manipulations, or a new relation in consequence of the removal of a cyst which caused either lateral or upward displacement. In either event it is easy to conceive how a train of forces may be set in motion which sooner or later may result in labor.

In removing the support which especially a pelvic cyst affords, the uterus naturally sinks into the pelvis, just as in normal pregnancy, a short time previous to labor, a fact which I am sure we do not sufficiently appreciate nor guard against by keeping the patient at least partially on her side during and after the operation in case of an abdominal cyst, or in the elevation of the hips and lower extremities under the same circumstances, and maintaining this position, combined with cautious tamponing of the vagina, if from the pelvis. The contention therefore is, that in destroying or obliterating a portion of a cyst, instead of removing it, we are accomplishing all that an operation can accomplish, and that since this can be done in less time, with less violence, and consequently less risk, it should more frequently be the course of election.

The following case, with its varied pathology, will suffice for illustration:

Mrs. A., aged 35; nullipara; presented symptoms showing marked dyscrasia. Examination revealed ascitic fluid, with a fluctuating abdominal tumor. History and symptoms pointed likewise to tubercular peritonitis. At the operation, a central abdominal incision exposed a thickened parietal peritoneum forming the anterior wall of an abscess which filled the greater part of the pelvic cavity, being circumscribed and limited by matted coils of adherent intestines on which were characteristic tubercular deposits.

After emptying the sac, and thorough irrigation, permanent drainage was obtained by passing a T tube through the floor into the vagina, and another tube was secured in the dependent angle of the wound through the abdominal wall, the wound closed and sealed with iodoform collodion and cotton. On either side of the sac a fluctuating tumor could be recognized; that on the left was diagnosed as an ovarian cyst, but the pathology of the one on the right was not so clear.

An incision in the median line above the umbilicus disclosed the same studded tubercular deposit on the intestines, with ascitic fluid, and a left unilocular, ovarian cyst, with a short pedicle, extending to the umbilicus; on the right a pyosalpinx, firmly adherent to the remaining unoccupied portion of the right pelvis, containing about four ounces of pus. It was utterly impossible either to ligate the pedicle of the cyst or remove the pyosalpinx, 1, on account of the height of the incision; 2, because of the immobility of the adherent intestines and the circumscribed abscess sac which occupied the bulk of the pelvic cavity.

After carefully walling off the intestines, the cyst was aspirated and about three-fourths of the collapsed wall removed; the interior of the remainder was thoroughly painted with tincture of iodin and, by the aid of a long dissecting forceps and needle holder, the marginal ends were turned in with an over-and-over continuous stitch. The pyosalpinx was aspirated in the same manner, the sac laid open, as much as could be reached removed, and, after careful sponging, the cavity cauterized with a solution composed of equal parts of carbolic acid and alcohol, care being taken to sponge out an excess of fluid which might remain. After closing the sac in a manner similar to that employed with the cyst, the abdominal wound was sutured and sealed.

Except for the through-and-through irrigation of the pelvic abscess, the convalescence of the patient presented no special points of interest, and the recovery from the lesions of the adnexa was ideal.

The case represents a type of those in which it is very difficult to remove the pathologic lesion, owing either to the location of the tumor or its structural intimacy or relation with some important organ, and furthermore illustrates the feasibility of cyst obliteration where removal is impossible. In the evolution of medicine we are not only developing more exactness, but greater simplicity; instead of prescribing for a disease we quiet a vasomotor disturbance by an agent of known physiologic action. In surgery we are in pursuit of the same ideals, and these are being realized as a result of more accurate anatomic differentiation and by the application of well-established and tried general principles in specialism. And thus, in dealing with the pathology under discussion, with greater experience and more extensive observation, the principle will appeal to us because it is rational, and while, surgically, pedicle ligation and extirpation may seem the more logical, the alternative suggested will be employed more frequently because of its signal advantage, becoming the operation of election, instead of, as now, the one of necessity.

217 South Broadway.

Obligations of Physicians Receiving Salary.—The French courts recently decided against a physician sued for damages by the widow of a pauper, on the ground that he did not respond promptly and made but the slightest examination, although he was the official, salaried physician to the poor of the community. The courts said that a verbal or written contract compels the physician to respond to calls and to continue his attendance in such a manner that no one can accuse him of negligence.

PARALYSIS AGITANS WITHOUT TREMOR.*

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PHILADELPHIA.

It is probable that no system of nomenclature yet devised is capable of meeting all requirements, because of constant additions to knowledge and corresponding variations in classification. This difficulty is especially manifest in medicine, where names are chosen sometimes from fancied resemblances, or from the prominence of certain symptoms or certain lesions, or on the basis of current and varying clinical or pathologic conceptions; or, worst of all, in intended honor of the discoverer or exploiter. With the progress of knowledge and with more extended observation, however, it not rarely happens that symptoms or lesions considered so distinctive as to be incorporated into the name given a disease, are found to be not invariably present, but are at times so ill developed as to be inconspicuous. Thus, we have learned from experience that typhoid fever may be unattended with typhoid symptoms, or elevation of temperature, or intestinal lesions; exophthalmic goiter, without either protrusion of the eye-balls or enlargement of the thyroid gland; scarlet fever or smallpox, without exanthem; paralysis agitans or shaking palsy without tremor or agitation or true palsy.

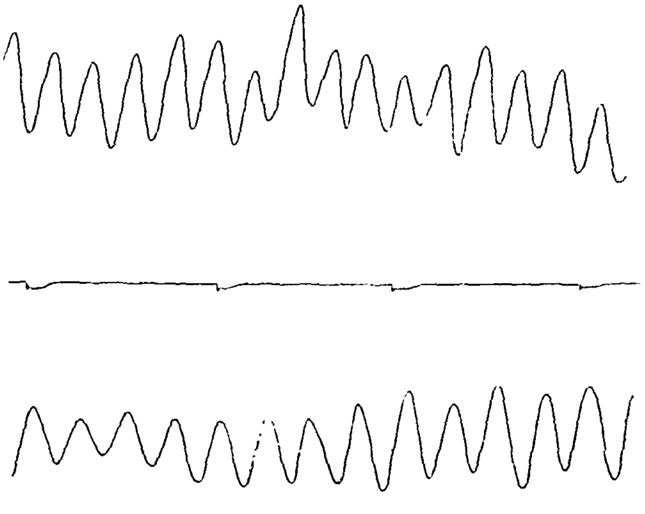

Fig. 1.—Both curves exhibit the inhibiting influence of passive extension of one of the fingers. The interrupted straight lines represent time in seconds. To be read from left to right.

The tremor of paralysis agitans is so distinctive and so constant that one might consider the diagnosis exceedingly difficult if at all possible in its absence. Even then, however, there is something in the *tout ensemble* of the case that makes the recognition comparatively easy and certain, if one be on his guard. The tremor is, further, the earliest symptom in the majority of cases. When present, it is rhythmic and relatively slow and coarse, while its range is variable. It almost invariably persists during rest and is temporarily inhibited by voluntary action as well as by passive movement, and probably also by other influences, although subsequently it may be resumed with its original or even with increased intensity. Rarely it has been absent or slight even during rest, and it has been induced or increased by voluntary action. It is aggravated by observation and emotional influences, but it ceases during sleep, and sometimes also in members paralyzed as a result of intercurrent organic disease of the brain. It often differs in degree upon the two sides of the body, more especially in the upper extremities, although when both sides are involved, the movements of the two sides are synchronous, it generally appears first in the upper extremities, especially the hands and fingers, and it may extend in monoplegiform, hemiplegiform or paraplegiform manner. The movements sometimes appear purposive, and resemble those that would be made in rolling pills or in holding a pen or in spinning wool. I am in the habit of describing them as intrinsic, because, unlike those that attend other forms of tremor, they appear to take place within the member rather than at its extremity merely. They seem, at times, to consist almost wholly in active flexion with reactive extension. I have found the frequency of movement to vary between 4.5 and 8.9, averaging, however, 5.9 oscillations per second.[1] The accompanying tracings will illustrate the frequency of the movement, its range—magnified—and its synchronousness on the two sides of the body, notwithstanding its predominance on one side, as well as the influence of voluntary and of passive movement. It has long been recognized, however, that the tremor is not absolutely constant, and its absence does not invalidate the diagnosis.

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* Read before the Medical Society of the State of Pennsylvania, at Wilkesbarre, Sept. 20, 1900.

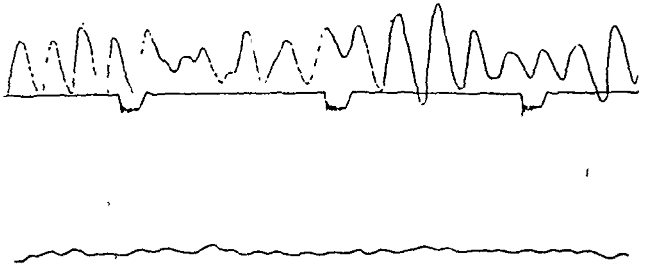

Fig. 2.—The movements of both hands recorded simultaneously. The upper curve represents the movement of the right hand; the lower, that of the left. In the latter the inhibiting influence of voluntary action is illustrated. The tracing exhibits the synchronousness of movement on both sides. The interrupted straight line represents time in seconds. To be read from left to right.

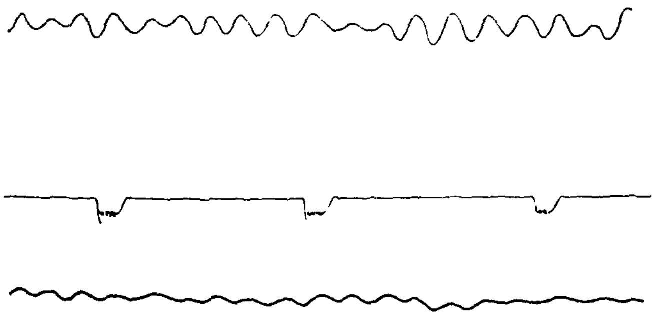

Fig. 3.—The upper curve represents the movement of the right hand; the lower that of the left. The interrupted straight line indicates time in seconds. Movement from left to right. Frequency, 6 1-3 per second. The tracing exhibits synchronousness of movement on the two sides, although the range of movement is greater on the right.

Not less distinctive than the tremor is the impairment of mobility. This has been attributed to muscular rigidity, to delayed transmission of volitional impulses from the cortex, and to muscular weakness. It attends efforts at both active and passive movement. It is this symptom that is responsible for the peculiar appearance and attitude of the patient. The face has, as a rule, a fixed, stolid, unemotional expression. The body often presents a forward inclination, the shoulders being round and stooped and the patient has a tendency to run forward. The knee-jerks are at times irritable and excessive, and occasionally there is abortive ankle-clonus. When rigidity is marked, the reflexes may be inhibited mechanically.

Among other symptoms of a subordinate character, are a sense of undue heat and increased sweating; a feeling of restlessness is also not an uncommon manifestation, necessitating frequent changes of posture and interfering with sleep. The patient is often depressed, though occasionally cheerful. There is, as a rule, no pronounced mental impairment, although failure of memory may be complained of.

Little is known of the etiologic factors responsible for the development of paralysis agitans. Direct inheritance of the disease is rare, although an indirect neurotic heredity is not infrequent. The disorder is more common in men than in women, and most so between the ages of 40 and 50. Antecedent infectious disease or intoxication has in some instances been thought to be operative. The onset is generally insidious, exceptionally acute, and the course is slowly progressive. The first symptoms not rarely follow profound emotional disturbances, long-continued overexertion or traumatism, and they may appear in the member specially affected.

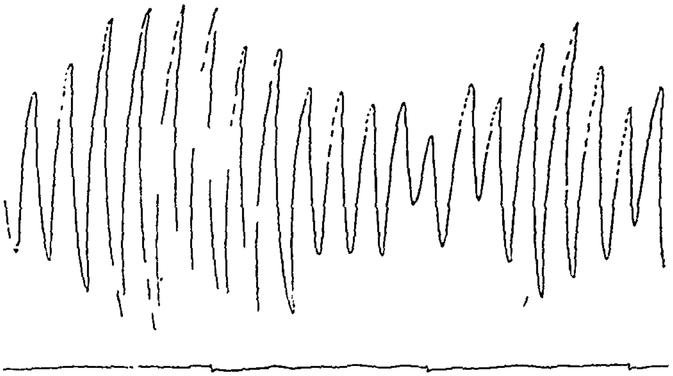

Fig. 4.—The above represents 3½ seconds. Movement from left to right. Frequency, 6 per second.

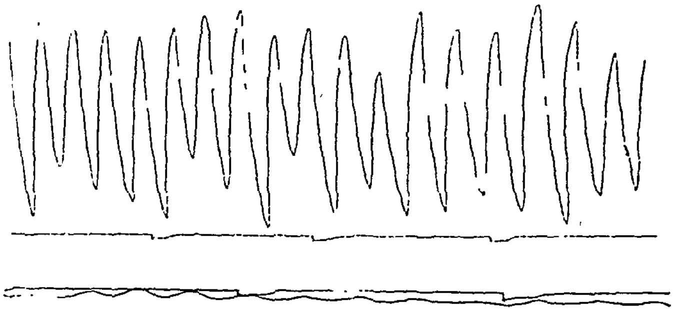

Fig. 5.—The upper curve exhibits the frequency and rhythm of movement, the lower apparently spontaneous inhibition, as well. The interrupted straight lines represent time in seconds. To be read from left to right.

The disease is one of the predegenerative period, and such lesions as have been found are not unlike those that attend senility. The disease is progressive and generally protracted in course, and not amenable to curative treatment. There may be remissions and exacerbations in the symptoms, or they may appear to be stationary. The patient eventually becomes incapacitated for his usual pursuits and death ultimately results from exhaustion or intercurrent disease.

Various palliative measures may, however, be employed, such as the administration of hyoscin or hyoscyamus, gentle exercise, active and passive, and the observation of general hygienic precautions.

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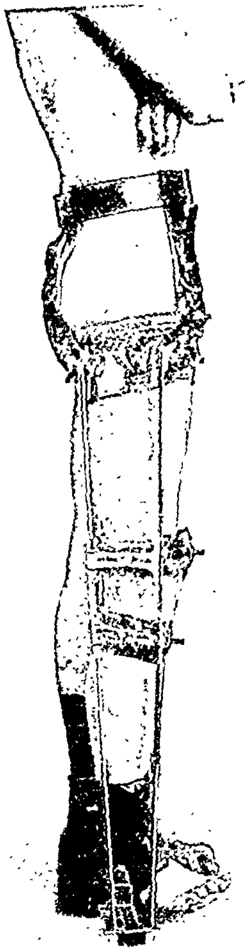
[1] Journal of Experimental Medicine, vol. ii, No. 3, 1897.

the treatment of fractures of the arm, and of fractures, deformities and diseases of the leg and hip-joint, the writer has constructed splints for the upper and lower extremities, each embodying the same general principles, so that a description of any one will suffice. The splints consist of inflatable cushions, in combination with adjustable stays, arranged in such a manner that there is no solid contact any where on the limb.

Each part of the splint is simply and easily adjusted. The cushions prevent any injury from pressure, and over the ankle they are arranged vertically with interspaces to permit of free circulation while securing extension. The leg or immobilizing cushions may be segmented if desired, but as the bones are not so superficial as at the ankle, and as there is no traction on the cushions, this is not necessary. The hip-cushion grasps the thigh at the angle of the pelvis, and is arranged so that it can be made to follow the angle of the right or left thigh, as desired. The sock grasps the leg at the ankle, with interspaces between its vertical cushions. By means of the adjustable stays, extension and counter-extension is made between these points with turn-screws and key. With solid metallic connection between these cushions, the degree of separation on which the adjustment depends remains the same, no matter what position is assumed.

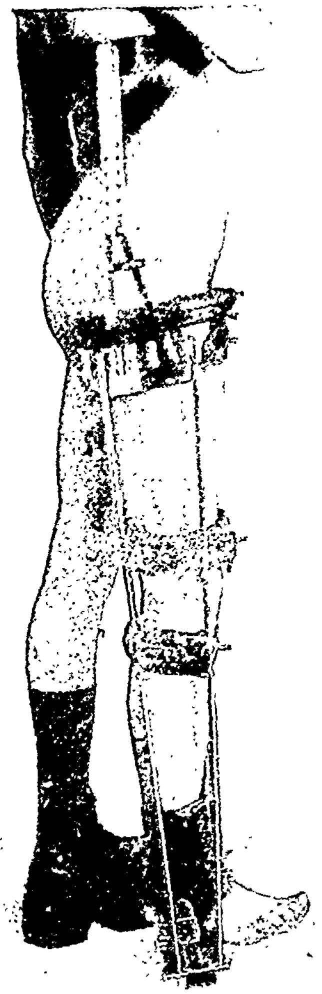


Pneumatic splint with belt suspender attachment for walking.

Shortening is prevented in fractures of the leg and thigh. Immobilization is secured by the aid of the leg-cushions, and clips connecting the stays, and is under full control, deformity being prevented, as well as shortening. When the splint is applied, the foot does not come into contact with the foot-plate.

In the ambulatory treatment, when the weight is placed on the foot-plate, it is received by the pelvis, the leg being in a "sling," suspended from the pelvis. A cane should always be carried, but where desired, a crutch may be substituted.

The shoe of the opposite foot should be raised, to match the raised foot. The erect position, with a limited amount of exercise, will tend to preserve the general health, increase the circulation, hasten absorption, and promote growth and repair, this, with the accuracy of adjustment which preceded it, and can be secured by this method, limits the amount of softening and absorption, hastens the time of healing, and avoids the usual muscular atrophy which accompanies fractures owing to disuse of limbs and circular constriction.



Pneumatic splint with immobilizing hip-joint attachment for walking, the adjustable belt not shown in illustration.

Bandaging to assist in retaining the fragments in apposition should pass from the leg or arm to the stays, for better support and to avoid circular constriction.

The suspender attachment supports the weight of the splint, from the body, and is adjustable.

The accurate coaptation secured by this method reduces pain, lessens the amount of softening and absorption, and hastens convalescence. By avoiding circular constriction, we limit the amount of exudation, facilitate growth, repair, and absorption; avoid ischemia and stiff joints.

Is circular compression adequate to maintain the apposition of the fragments? Experience in fractures of the upper third of the femur has shown that circular compression, no matter how applied, can not by itself maintain apposition. What is true in the upper third

The tremor of paralysis agitans is to be differentiated especially from that of senility, of alcoholism and other forms of intoxication, from the incoördinated movements of multiple cerebrospinal sclerosis and from hysterical tremor. Senile tremor, however, rarely, if ever, begins in one member or on one side, but generally is distributed uniformly. It is usually fine and frequent, slight or absent during rest, is increased by violent effort, is not associated with rigidity, occurs later in life, and is not progressive in course. The various forms of toxic tremor, likewise, are fine, frequent, general, slight or absent during rest, increased on voluntary action, and unassociated with rigidity. They may, of course, occur at any time of life, although more common during active adult existence, and in conjunction with other more or less distinctive symptoms. A history of exposure to the exciting influence is of decisive importance in the diagnosis. The movements of multiple sclerosis are coarse and somewhat unlike ordinary tremor, being rather incoördinate and wanting in rhythm. They are also generally absent during rest and are induced only by voluntary effort, and are often associated with lesions of the fundus of the eye, with nystagmus, scanning speech and derangement of micturition, while rigidity is not likely to be present and the peculiar facies of paralysis agitans is wanting. The tremor of paralysis agitans is to be differentiated from that of hysteria by the association with the latter especially of other hysterical stigmata and by the influence of suggestion.

Paralysis agitans without tremor is not so common that the report of two cases recently under observation in which tremor was the least conspicuous of the symptoms may not be without interest. Both patients were seen at the Orthopedic Hospital and Infirmary for Nervous Diseases, the one in the service of Dr. S. Weir Mitchell and the other in that of Dr. Wharton Sinkler, to both of whom I am indebted for the privilege of making this report.

S. S., a plumber 50 years old, presented himself for what he designated nervousness. He suffered from mental confusion, with depression and introspection. There was also weakness of the legs, more marked on the left. For several years there had been stiffness, which began with a cramp-like feeling in the left foot, and extended to the shoulder and elsewhere. Slight tremor was noted and this the patient stated occasionally became quite marked, although at times it was scarcely, if at all, appreciable. The patient presented the typical appearance and facies of a case of paralysis agitans. The face was fixed and immobile, the attitude was stooped forward, the speech was slow, the voice low and monotonous, and all movements and apparently also cerebration appeared slow. The knee-jerks were small and station was steady. The pupils were full, equal, regular, reactive to light. The grasp was firm, the dynamometric register being 170 on the right and 130 on the left. There was some tendency to propulsion. The action of the heart was rhythmic and the sounds clear. The radial artery was stiff and the tension plus. Memory was impaired; sleep was poor; the bowels were constipated. The patient was easily chilled and suffered readily from cold, and under such circumstances the hands became cyanotic. The urine presented no abnormality. The man once had gonorrhea, but there was no evidence of syphilis. He had used alcohol, tobacco, coffee and tea only in moderation. He had suffered business reverses and one of his daughters was neurasthenic from overstudy.

J. H., a woman 68 years old, presented herself on account of weakness in the lower extremities and in the back, with difficulty in walking. There was slight tremor in the right hand on voluntary movement. The countenance was rather fixed. Speech was slow and the gait decrepit. The knee-jerks were slightly exaggerated, but there was no ankle-clonus. On inspection it was found that both hands were tremulous when held out, but not when in action or at rest. The tremor was said to be more marked on some days than on others. Station was unsteady, the patient yielding toward the right, as she did also in walking. In attempting to walk there was some delay in starting out, and all movements were performed slowly. The action of the heart was rhythmic, the first sound clear, the second greatly exaggerated. The pulse, though not strong, was of increased tension. The pupils reacted to light. The patient suffered from no sense of undue heat, and from no excessive sweating. An additionally interesting feature of this case is the fact that a daughter 47 years old, who merely accompanied her mother and did not seek treatment, presented a distinctly cretinoid appearance. She had not learned to walk until the age of 3, although she spoke clearly and subsequently did well at school. Menstruation had not begun until the age of 22. The patient was short of stature, measuring only 4 feet 6 1/2 inches in height. The thyroid gland, especially the right and middle lobes, was found enlarged, and is said to have been so for seven or eight years. The complexion was pale and muddy, and the skin wrinkled; but there was no thickening of the subdermal tissues. The tongue was rather large and rough, and intelligence appeared deficient. There was no tachycardia and the eyes were not prominent. The knee-jerks were active, but there was no ankle-clonus.

While it can not be strictly said that in the two cases of paralysis agitans which I have reported the tremor was wholly absent, it was at times so inconspicuous as not to be viewed as a symptom of importance, much less of diagnostic utility. The main object of this communication is to invoke renewed attention to the fact that the disorder under consideration may be unattended with tremor, and further that this, when present, may be accentuated by voluntary action.

NEW METHODS FOR THE APPLICATION OF OLD PRINCIPLES IN THE TREATMENT OF FRACTURES AND DEFORMITIES OF LIMBS.

JAMES G. HUGHES, M.D.
SHEBOYGAN, WIS.

In all cases of fracture, to restore and maintain the limb in its normal position, extension and counter-extension between bony prominences, or a flexed segment of the limb, above and below the fracture, must be employed.[1] To this must be added immobilization, when normal position of the limb is accurately secured. In addition to the above principles, the open dressing, in compound fractures, is of primary importance for obvious reasons. Every splint should permit of inspection, bathing, ventilation, etc. There should be no circular constriction of the limb to retard the circulation. The effects of impaired circulation, delayed union, ischemia, stiff joints, and in some cases non-union, can be ascribed to this interference.

It is safe to say that fully one-half the fractures of the leg should be treated by the ambulatory method. Many patients assume the erect position in spite of the warnings of their medical attendant. The patient suffering from a fracture of the leg, or thigh, is asked to assume the recumbent position until nature repairs the solution. The principles governing the treatment of fractures are the same in the erect as in the recumbent position, and can be applied in one case as well as in another, and if these principles are fulfilled, displacement can not occur in either position.

With a view of embodying the above principles in the treatment of fractures of the arm, and of fractures, deformities and diseases of the leg and hip-joint, the writer has constructed splints for the upper and lower extremities, each embodying the same general principles, so that a description of any one will suffice. The splints consist of inflatable cushions, in combination with adjustable stays, arranged in such a manner that there is no solid contact any where on the limb.

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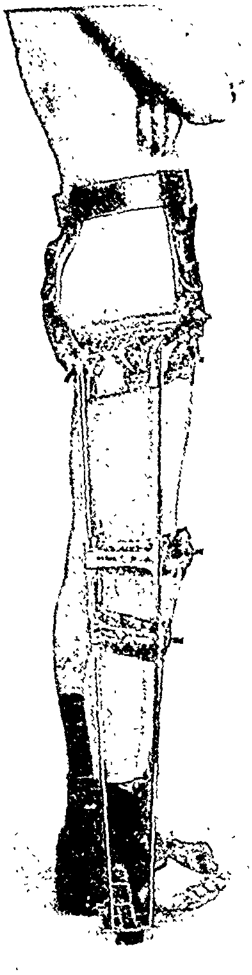
[1] American Text-Book of Surgery, 1893, p. 287.

Each part of the splint is simply and easily adjusted. The cushions prevent any injury from pressure, and over the ankle they are arranged vertically with interspaces to permit of free circulation while securing extension. The leg or immobilizing cushions may be segmented if desired, but as the bones are not so superficial as at the ankle, and as there is no traction on the cushions, this is not necessary. The hip-cushion grasps the thigh at the angle of the pelvis, and is arranged so that it can be made to follow the angle of the right or left thigh, as desired. The sock grasps the leg at the ankle, with interspaces between its vertical cushions. By means of the adjustable stays, extension and counter-extension is made between these points with turn-screws and key. With solid metallic connection between these cushions, the degree of separation on which the adjustment depends remains the same, no matter what position is assumed.

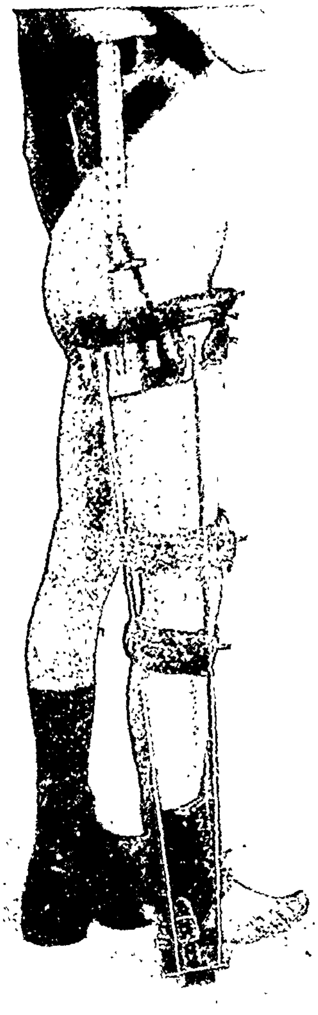
Shortening is prevented in fractures of the leg and thigh. Immobilization is secured by the aid of the leg-cushions, and clips connecting the stays, and is under full control, deformity being prevented, as well as shortening. When the splint is applied, the foot does not come into contact with the foot-plate.



Pneumatic splint with belt suspender attachment for walking.

In the ambulatory treatment, when the weight is placed on the foot-plate, it is received by the pelvis, the leg being in a "sling," suspended from the pelvis. A cane should always be carried, but where desired, a crutch may be substituted.

The shoe of the opposite foot should be raised, to match the raised foot. The erect position, with a limited amount of exercise, will tend to preserve the general health, increase the circulation, hasten absorption, and promote growth and repair, this, with the accuracy of adjustment which preceded it, and can be secured by this method, limits the amount of softening and absorption, hastens the time of healing, and avoids the usual muscular atrophy which accompanies fractures owing to disuse of limbs and circular constriction.



Pneumatic splint with immobilizing hip-joint attachment for walking, the adjustable belt not shown in illustration.

Bandaging to assist in retaining the fragments in apposition should pass from the leg or arm to the stays, for better support and to avoid circular constriction.

The suspender attachment supports the weight of the splint, from the body, and is adjustable.

The accurate coaptation secured by this method reduces pain, lessens the amount of softening and absorption, and hastens convalescence. By avoiding circular constriction, we limit the amount of exudation, facilitate growth, repair, and absorption; avoid ischemia and stiff joints.

Is circular compression adequate to maintain the apposition of the fragments? Experience in fractures of the upper third of the femur has shown that circular compression, no matter how applied, can not by itself maintain apposition. What is true in the upper third is also true, in a lesser degree, in other places. The beneficial effects of circular constriction with bandage and cast, has been over-estimated, while its dangers and disadvantages have been too little commented on, if they have been fully appreciated. Open dressings facilitate inspection, dressing, bathing, ventilation, massage, and any indicated treatment, the importance of which needs no emphasis. The attachment for immobilizing the hip-joint is applied in fractures of the neck of the femur, and also used in hip-joint diseases, and is on the same principle as that now in vogue. When the key is removed and the caps replaced, the splint is locked, and the adjustment can not be interfered with. The pneumatic pads are covered with satin-finished waterproof leather, and can be cleaned with warm water and soap when necessary.

The splints are easily worn under the regular clothing, and are so well constructed that they will last practically a life time.

They have been tested by the writer in some severe cases, with perfect results; among them, one case of compound, comminuted, multiple fracture of both legs. The bones in the right leg penetrated the skin in five different places, and in the left leg, in three. Several loose fragments of bone had to be removed. The usual dressings were tried, but had to be abandoned on account of the excrutiating pain and stasis. Amputation of both legs was considered necessary by attending physicians, but the patient would not submit to it, and further counsel was called, resulting in the application of pneumatic splints to both legs. The pain ceased at once, on application. The absence of circular constriction allowed complete restoration of the circulation, and permitted of proper open dressings for the wounds. The splints were only worn thirty-three days; ankle and knee motion was in no way impaired; the union and result was perfect.

I mention another case, on account of the attending circumstances, one of simple fracture of the tibia. The patient was erecting a house at the time, and hauled lumber seven miles daily, without discomfort and with perfect result.

Before bringing the appliances to the notice of the profession, they were submitted to some of our most eminent surgeons, whose unqualified endorsement has demonstrated the unparalleled excellence of the treatment.

POSSIBILITIES OF LIQUID AIR TO THE PHYSICIAN.*

A. CAMPBELL WHITE, M.D.
NEW YORK CITY.

It is now over a year since I began the use of liquid air in the hospitals of New York, and less than a year since I published in the *Medical Record* a preliminary report of the results obtained by its use up to that time; and I am led to-day to accept your invitation to present this subject to your Section, no less by the pleasant recollections of the last time I appeared before you, than by the many communications I have received since publishing my report, from all parts of the world, demonstrating the lack of knowledge of the public as well as physicians as to what liquid air really is. I have received requests from physicians from nearly all parts of the United States, from Mexico, from Germany and even from New Zealand, asking that a small package be sent and all expense would be paid at the other end. I have been asked whether it were given hypodermatically, and whether it would not be good taken in small doses internally for abscess of the liver. One physician, who has represented many drug houses, wanted to know if it could not be put up in small packages and retailed at the drug stores and whether he could not act as my Southern agent. Nearly all physicians say, in discussing the subject, "Oh, we have tried extreme cold before and know it is no good." Possibly there are some of you here this afternoon who have never seen liquid air, and if so, I shall demonstrate that you really never knew what cold was before. I intend at least to show you what liquid air really is, and have brought with me, through the courtesy of the Tripler Liquid Air Company, a generous supply in order that I may show you its physical properties and demonstrate some of its applications, as well as show you some of the appliances which more directly concern us.

After doing this, I desire to briefly tell you of some of the things we have accomplished with it at the Vanderbilt clinic of Columbia University, and elsewhere; and then call attention to some of the things which may be done in the treatment of internal diseases. [Dr. White gave several demonstrations with liquid air.]

In my former paper I told of the results of our attempt to kill germs with liquid air. With Dr. William H. Parks, we tested the effects of liquid air on typhoid, anthrax and diphtheria bacilli. In order first to test the effect of extreme cold on these germs without bringing them in direct contact with the liquid, we put into a number of capillary tubes pure cultures of virulent anthrax, diphtheria and typhoid bacilli. These capillary tubes were marked for identification, sealed at both ends, and dropped into a glass of liquid air. The liquid was renewed at intervals, so that the tubes were at all times completely submerged. Some were removed in thirty minutes, others in forty-five minutes, sixty minutes, and ninety minutes. After they were removed from the liquid and the sealed ends were broken, they were dropped into separate culture-tubes containing fresh sterilized bouillon, and these in turn marked for identification. These bouillon tubes were placed in incubators kept at a temperature of 38 C., where they remained for over forty-eight hours, when they were all examined and found to contain pure cultures of anthrax, typhoid and diphtheria bacilli according as they had been inoculated. In order to test whether liquid air itself in addition to its temperature would have any effect on germ life, a culture-medium containing numerous colonies of anthrax bacilli was dropped into a glass of liquid air and allowed to remain over an hour. When removed, a fresh sterile culture-medium was inoculated with the one exposed to liquid air and placed in the incubator as before. The same result was obtained as when the capillary tubes were exposed.

Dr. J. H. Huddleston tried the effect of liquid air on vaccin virus, and found that fifteen minutes' or less exposure to the liquid air had no effect whatever on the power of the virus to produce vaccination.

Longer exposures to liquid air have been tried with the same result. Dr. Park has recently made further experiments, making the exposure over two hours and exposing all kinds of germ life in form of pure virulent cultures, from hay infusion to anthrax bacilli. With this exposure, taken all together, from the weakest germs to the strongest, it kills from 98 to 50 per cent. Of the typhoid germ it kills about 75 per cent. in two hours' exposure, the staphylococcus about 50 per cent., and the diphtheria typhoid, about 65 per cent. This exposure does not completely destroy the virulence of any pure culture, but of course the activity or virulence of all these germs is suspended for a long time after exposure to the liquid air, and they are only brought back to activity by the most careful handling and under the most suitable conditions. Professor Dewar, of London, is reported to have given bacteria exposure to liquid air for two weeks, with practically the same results.

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* Presented to the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Now the question is, knowing these facts, what is the effect of liquid air upon germs existing in the living tissues of the body. We know that the human organism is the natural enemy of the bacillus. We have reason to believe that the human system develops an antitoxin when invaded by the ptomain-producing bacteria, which under most conditions is successful in withstanding this invasion. Is it not possible that the temporary suspension of the vitality of these germs, due to the application of liquid air, gives nature the opportunity to completely destroy them, particularly when we remember that the local circulation is much increased shortly after the application.

Buchner,[1] in an article on the natural defenses of bacteria, speaks of the results obtained by us in the use of liquid air, and attributes all our success to the subsequent local hyperemia produced.

CLINICAL USES OF LIQUID AIR.

Liquid air, applied to the healthy living tissues, causes a temporary local anemia accompanied by anesthesia, or a slough, depending upon the amount used.

The results obtained by an excessive application are best explained by the experiment performed on the rabbit, before we had used the liquid air on the human body. About three-quarters of the ear of a rabbit was completely frozen by placing it in liquid air for some minutes. The ear was frozen so stiff that a small piece of the tip was broken off with the fingers without pain or hemorrhage. In less than ten minutes' time the circulation was entirely re-established with hemorrhage at the point where the piece had been broken off; the frozen part had regained its normal temperature—possibly a little higher—and color. The ear remained perfectly normal for about five days, when it began to swell somewhat, and by the end of two weeks about one-half of the frozen part had shriveled and dropped off. The remainder of the ear regained its normal condition. The part to which the liquid air is applied—with the spray—immediately loses all the blood, becomes perfectly colorless and is accompanied in the application by no pain excepting a slight tingling sensation which is only felt at the very beginning of the application. If only a slight amount is used the circulation almost immediately returns, the part becomes congested and frequently elevated, looking like a wheal or urticaria; this subsides soon and may or may not for a while itch to a slight extent. The anesthesia lasts not only while the anemia exists, but for some time after, owing to a temporary paralysis of the sensory nerve terminals. A freezing sufficient to produce anesthesia for ten minutes can be given without causing any more destruction of tissue than a slight desquamation of the superficial epithelium, which in no way interferes with primary union.

I recently did an operation under the influence of local anesthesia produced by liquid air, for the purpose of relieving a deformity of the hand resulting from a poorly-treated burn of childhood. The hand was freely incised, and the fascia cut here and there, relieving whatever adhesions existed. The operation caused no pain, the result was perfect, and primary union was in no way interfered with. I could mention any number of cases equally successful where liquid air has been used as an anesthetic.

I think you can readily appreciate in how many cases this anesthesia would be preferable to any other, for example, opening of an abscess, where there is always an element of some danger in the use of cocain; incising a paronychia; and of what great value it would be in a cardiocentesis, paracentesis thoracis or abdominis, where the vital functions are already at so low an ebb as to preclude the use of anesthetics.

In this connection I will just mention the almost invariable success resulting from the application of liquid air in the same way over the spinal end of the nerve in neuralgias and herpes zoster. The pain ceases almost immediately; rarely is more than one application necessary, and the only bad result has been some ulcerations at the point of application in some patients of advanced years, where the vitality of the skin was exceptionally low. These ulcerations readily heal with proper treatment, and are, as a rule, a pleasant substitute for the pain of neuralgia and herpes zoster.

As a cold application to allay or abort an acute inflammation, its use is ideal, and should be applied intermittently with the roller. The same would apply to an acute adenitis—not neglecting to treat the cause.

In the treatment of a boil I would use the spray, and, if just beginning, I would completely freeze it, possibly pricking it while frozen here and there with a needle, in order to relieve any subsequent congestion. If pus to any extent had formed I would freeze and make small incisions. It will always abort a boil if taken in time, although of course not preventing others forming.

From my experience in the local treatment of carbuncle with liquid air I am satisfied from every point of view that this is by far the best form of treatment. It is less painful to the patient than any other form of treatment. Only one application is necessary; within twelve hours of the first application, the pain entirely ceases, not to return again, and at the end of a few days only a small ulcer is left—representing the tissue between the openings of the carbuncle—which readily repairs with usual dressings. In the treatment of the carbuncle the spray is used, first projecting it into the openings and using the air quite freely, then quite thoroughly freezing the external surface, which must be well cleansed of discharge resulting from sending air inside of the carbuncle before freezing. After freezing, the carbuncle should be dressed with a dry absorbent dressing, so that the discharge, which will be abundant and accompanied with considerable bleeding, can be readily absorbed. The reaction from the freezing takes place in about twenty minutes, and it is to this extreme hyperemia that I attribute the success of liquid air in the treatment of this affection more particularly.

Before using liquid air in lupus we anticipated success, and our expectations have been realized, both in the treatment of the erythematous form and in lupus vulgaris. In the former variety we use the cauterizing instruments frequently, not freezing to any great extent at each application. Excessive desquamation results after each application, until good healthy skin appears, slightly reddened. The applications are then stopped and the redness soon disappears. Lupus vulgaris is treated rather generously with the spray once or twice. This causes a slight acute inflammation, which results in a healthy ulcer that quickly heals.

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[1] Münch. Med. Wochschr., Oct. 3, 1899.

As a stimulant in the treatment of chronic ulcers, varicose and non-specific, one application, not to the point of freezing, but intermittently for about five minutes with the spray, is of great utility.

Liquid air as a cauterizer is probably the first thing that would occur to us after having seen and handled it, particularly for the removal of the benign foreign growths. For this purpose we now use liquid air to the exclusion of almost all other methods. For the quick and comparatively painless removal of a nevus, without any resulting scar, it is not equaled by anything we now have at our disposal. I have already shown you the instruments for its application in this direction for the destruction of adenoids, polypi, nevi and other hypertrophies.

The study of carcinoma has been universal and popular during the last few years, and this study promises to disclose the true cause of this dreadful and undoubtedly increasing malady. No doubt when its true etiology has been established we will find some treatment which will prove either prophylactic or curative. I think we must all have been impressed who have seen many of these cases, with the utter futility of almost every method of treatment at our disposal; even surgery seems to give in nearly all cases only a temporary relief, to be followed by even more malignant growth. The consideration of cancer is certainly not a subject of discussion for this Section, but I would not be doing justice to my subject did I fail to mention the great good liquid air has done in these cases. Even in cases in which the treatment has failed to cure, which were far beyond operative interference, where the patient has had two or three operations, where the patient has had every "special treatment," quack and otherwise, in the country; even in these cases, the great good done in the relief of pain and the destruction of bad odor, both so characteristic of this disease, places liquid air in efficiency far above any other treatment we have to-day.

In my previous paper I said I could make no claim for liquid air in the treatment of cancer, for my limited experience at that time, though promising, did not warrant my offering any encouragement; I can truly say to-day that I believe that epithelioma, treated early in its existence by liquid air, will always be cured, and that many cases inoperable can also be cured by its application. Prof. George H. Fox, in one of his lectures in the College of Physicians and Surgeons, New York, presented last autumn one of the first cases treated at his clinic by liquid air. This patient, a woman some 60 years of age, had an epithelioma on the right face, involving the outer canthus of the right eye. Professor Fox, in presenting this case, said, "No treatment at our disposal could have destroyed an epithelioma of this character in so short a time and with so slight a scar remaining as liquid air has done in this case." This subject requires a paper devoted entirely to its consideration, and I am sorry I can not present the history of some of these cases in detail, those which have recovered and those less fortunate, for every one bears testimony to the efficiency of liquid air in the treatment of carcinoma.

When we come to consider the use of liquid air in the treatment of non-cutaneous diseases, there is a very broad field open to us and many obstacles present themselves which are difficult to overcome. I think it will at once occur to us all that we ought to be able to use this cold, dry vapor given off by liquid air, for the reduction of temperatures in fevers in something the same manner as we now give hot air and steam baths to promote activity of the skin. We are now having made an apparatus which we hope will accomplish this result; if so, it will be much more simple than the cold plunge and be much more pleasant and agreeable to the patient, accomplishing at the same time the desired results.

I have also thought that the inhalation of this vapor, which is almost pure oxygen, would be of great value in the treatment of certain diseases of the air-passages, such as hay-fever, acute laryngitis, tubercular laryngitis and possibly pulmonary phthisis. For this purpose I am having made an inhaler which will carry the vapor well back over the glottis before it becomes warm; and, furthermore, this vapor can be medicated, and in this way carry with it some remedy which might possibly add to its efficiency. The results of this treatment are, of course, purely speculative, but I anticipate success in this direction in the treatment of at least some of the diseases mentioned.

I regret that time does not allow me to go more fully into details regarding some of the cases I have treated with liquid air; but if I have given you all a fair idea of what liquid air is, what it looks like and what some of its possibilities are to us and to our patients, I shall feel well repaid for undertaking this demonstration, and I hope the discussion which is to follow will bring out many new points we have not thought of before.

DISCUSSION.

Dr. Louis Fischer, New York City—It seems to me that the question of local anesthesia is one of great importance to pediatrists, as for instance in the treatment of scrofulous manifestations, local abscesses, suppurative adenitis, various forms of peritonsillar abscess and the removal of adenoids of the pharynx.

Dr. Waher.—In the treatment of carbuncle, is your object to establish a slough?

Dr. A. Campbell White—There are usually four openings around the center, forming, so to speak, the corners of a square. These corners will slough, but not the edges. The good results in carbuncle I believe to be partially due to the fact that these openings exist. The excessive congestion which comes on after the application of the liquid air is relieved by a free discharge through these openings. There is only a temporary suspension of the activity of the bacilli.

Dr. L. J. Lautenbach, Philadelphia—Did you freeze and operate with the knife upon the case of epithelioma at the side of the eye?

Dr. White.—No, we used the liquid air cauterizer and simply closed the eye. When liquid air strikes the skin it is for the moment at a temperature of 312 F. below zero. I should freeze slightly, then wait and repeat the operation perhaps three or four times. The woman referred to had twelve treatments. There was a marked and edematous inflammation of the side of the face. It subsided in about three days. After that the improvement was very decided. This has been true of almost all cases. I have applied liquid air in epithelioma of the tongue. Here there is so much moisture that inflammation is easily excited, so that this agent must be used with great care. In two cases, one in the anterior part, and the other in the posterior part of the tongue, I have used the liquid air. After about three or four applications it was necessary to temporarily stop treatment because of the inflammation induced. Great care must be observed in posterior cases for fear of the possibility of edema of the glottis arising. Almost no sloughing follows the application of liquid air. The destruction is very superficial as we use it. In a case of carcinoma of the face we break up the intercellular substance of the epithelioma by freezing, and destroy the nutrition of the superficial cells. When the patient first returns there is a small ulcer, and we repeat the application. Eventually there is no further return. I would not dare to put a glass instrument into a child's throat for removing adenoids; I should prefer to make use of one made of thin aluminum. I have treated erysipelas by filling a glass globe with liquid air and rolling it over the surface. For local refrigeration I have made use of a brass roller into which liquid air is introduced, and then the roller is passed over the part.

MOVEMENTS OF INTESTINES.*

ALBERT BERNHEIM, M.D.
PHILADELPHIA.

During treatment of a woman for floating kidney, nervousness and general debility, I administered—in the course of a rest-cure—enemas of cottonseed-oil; one time, about five hours after the injection, the patient vomited, the vomit for a greater part proving to be cottonseed-oil, this incident showing the possibility of a retrograding current of the oil from the rectum to the stomach. These oil enemas were administered for over two weeks and it was only this one time that oil was vomited. I was induced by this fact to make some experiments with injections into the rectum of a negro; these will be mentioned later on; besides I used a black-and-tan dog for experimenting, and, later on, in treating a woman for mechanical gastric insufficiency with a subacid condition, in which vomiting was not infrequent, the nutrient enemas used served as experiments.

It is for the research into the consumption of such nutrient enemas that various investigators experimented on the movement of the intestines, to learn of possible antiperistalsis of the gut.

Celsus (3-5 B. C.) mentioned the efficiency of nutrient enemas; in 1869 Voit and Bauer, in Munich, investigated their value as to absorption in the body, and found that an egg-emulsion, with the addition of a pinch of sodium chlorid, will be easily absorbed by the mucous membrane of the rectum and colon. Eichhorst, two years later, observed the same results. Czerny and Latschenberger, experimenting on men, found that not only albuminates, but also fat in emulsion and paste of starch, would be absorbed, when introduced into the rectum; they could not determine whether the starch is converted into sugar or not before the absorption, and it remained doubtful where the absorption occurred. Leube thought it necessary to peptonize the enema by mixing it with pancreas before injecting it into the rectum. Ewald, making a greater series of experiments, declared the peptonizing process superfluous, finding that an emulsion of egg-albumen will be absorbed even without the addition of sodium chlorid. Huber took an intermediate position between Voit and Bauer and Eichhorst on the one side and Ewald on the other; he recognized the fact of absorption without sodium chlorid, but the absorption was better with an addition of salt. Hemmeter explains the absorption without an addition of sodium chlorid, because this salt is naturally present in the egg. The absorption of the enemas was always said to occur in the lower and lowest parts of the bowels. L. Landois, in his book on physiology, says that the ileocecal valve prevents in general the contents of the colon from re-entering the ileum. When liquid masses are injected gradually into the rectum through a tube, they may get above the ileocecal into the ileum. In 1884, Nothnagel saw antiperistaltic movements of the gut when he touched the exposed intestinal section with a crystal of sodium chlorid or injected a salt solution by means of a Pravaz syringe. Grützner thought the fact of this antiperistalsis a chief point as to the effect of nutritive enemas. His experiments were made on white mice, rabbits, guinea-pigs and cats, which had hungered for twenty-four hours. The injection mixtures consisted of a physiologic salt solution, with animal coal or starch or finely cut horse-hair or sawdust or poppy seeds. Four or six hours after the injection Grützner found the introduced particles in the stomach and in the entire course of the gut, except in the rectum. When, instead of salt solution, distilled water or a solution of .1 per cent. hydrochloric acid or of .6 per cent. potassium chlorid had been used, the introduced particles could not be discovered in the upper parts of the alimentary canal. Grützner at the same time took such precautionary measures that the animals could not have swallowed any excrements. The same positive results were found by him in experiments on man, in whose rectum he had injected starch emulsion.

Christomanos imitated these experiments and found that his researches corresponded to those of Grützner, if he followed the latter's method, but if he subjected the animals to extraordinary measures, such as severing and ligating the esophagus or fastening them down to the vivisection table for up to six hours, or applying the mouth-clamp, the experiments were negative. The latter series of experiments were made under rather pathologic conditions, and therefore can not prove what they seem to show. His experiments were made with carmin, Prussian blue, lycopodium dyed red or blue, and alcanna-oil, on white mice, rabbits, frogs, pigeons and men. Only two out of ten experiments made on men were positive; in these cases he used either lycopodium or bismuth subnitrate, but lycopodium is often unseen in the microscope, and the bismuth crystals are not always to be recognized as such, even if stained black through the abode in the intestines.

Dr. Swiezynski, in the clinic of Professor Riegel, tried the same kind of experiments on men and dogs. In 12 cases, unstained lycopodium had been introduced 7 times, in 6 instances in a physiologic salt solution; the 6 times were positive; in the seventh case 1 grain of lycopodium; in the eighth and ninth cases, lycopodium stained with nitrate of silver in a salt solution was used, and in both instances grains of lycopodium were found in the stomach. In 2 other cases lycopodium stained with gentian violet was introduced, once with sodium chlorid and with positive result; the other time without addition of salt was negative. In the twelfth case bismuth subnitrate was used; this experiment could not be regarded as absolutely positive. Six other experiments were made with gentian violet lycopodium, 4 times in sodium chlorid solution, and twice without the salt; these were more or less positive.

Dr. Dauber made 17 experiments on white mice, white rats, rabbits and dogs, with indigo or cinnabar; 6 experiments were positive, 11 negative, the positive result occurring in cases where animals were subjected to rather physiologic conditions; the 11 negative ones, I should think, were due to a too severe restraint, whereby the animals were subjected to a pathologic condition. The experiments on animals under physiologic but precautionary measures are, in my opinion, only proving if positive, and not disproving if negative. The chief proof must lie in the human experiment. Hemmeter regards this Grützner antiperistaltic motion as only a very feeble marginal ascending movement, effected by surface contact of the particles with the epithelium, which in turn is moved by the muscularis serosa; further, he says, it is never visible to the eye, and it is not capable of propelling food masses. Among the abnormal conditions that may cause this visible antiperistalsis, Nothnagel mentions solution of sodium chlorid and introduction of food at an unphysiologic entry, which in man we must consider the rectum. Hemmeter differentiates between two antiperistaltic motions, Grützner's physiologic marginal invisible antiperistalsis and Nothnagel's pathologic visible one. I can not see the difference between Grützner's and Nothnagel's antiperistaltic motions, as Grützner did what Nothnagel stated as a cause of a visible antiperistalsis, namely, the introduction of food at an unphysiological point of entry.

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*Presented to the Section on Physiology and Dietetics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Hemmeter's opinion that food masses can not be propelled upward is not to be considered as entirely correct, as there are reports of undoubted propulsion of food masses. As early as 1827, Leslie reported a case of gastritis, in which on the fourth day an enema of turpentin and oil was rejected through the mouth; in 1857, Hall spoke on diaperistaltic and antiperistaltic action. Another case of antiperistalsis was reported by J. Frank, in 1883, where a nutrient enema was expelled by vomiting. Riegel joins Grützner and Swiezynski as to the positive result of the experiments and considers the antiperistaltic movements after injections into the rectum as proved.

As an antiperistalsis we have to regard the sensation of *globe hystérique*, and not so seldom nervous persons, especially women, complain of a sensation as if the bowels and stomach moved upward; it is true, as a rule, we consider these complaints as hysteric, i. e., often imaginary, while in other cases hysteric women tell us that they vomited excrements; even persons not nervous may tell the physician that they feel an upward motion in the intestines, which is followed by ructus.

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capable of propelling food masses. Among the abnormal conditions that may cause this visible antiperistalsis, Nothnagel mentions solution of sodium chlorid and introduction of food at an unphysiologic entry, which in man we must consider the rectum. Hemmeter differentiates between two antiperistaltic motions, Grützner's physiologic marginal invisible antiperistalsis and Nothnagel's pathologic visible one. I can not see the difference between Grützner's and Nothnagel's antiperistaltic motions, as Grützner did what Nothnagel stated as a cause of a visible antiperistalsis, namely, the introduction of food at an unphysiological point of entry.

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[1] Phila. Med. Jour., Oct. 27, 1900.

Since the publication of our preliminary note, we have continued our investigations, especially as regards the means by which yellow fever is propagated from individual to individual, and as to the manner in which houses become infected with the contagium of this disease. The results already obtained are so positive and striking that, with the permission of Surgeon-General Sternberg, we have concluded to present to this Congress an additional note, in which we will record these later observations. We desire to here express our sincere thanks to the Military Governor of the Island of Cuba, Major General Leonard Wood, U. S. V., without whose approval and assistance these observations could not have been carried out.

In order to exercise perfect control over the movements of those individuals who were to be subjected to experimentation, and to avoid any other possible source of infection, a location was selected in an open and uncultivated field, about one mile from the town of Quemados, Cuba. Here an experimental sanitary station was established under the complete control of the senior member of this Board. This station was named Camp Lazear, in honor of our late colleague, Dr. Jesse W. Lazear, Acting Assistant-Surgeon, U. S. A., who died of yellow fever, while courageously investigating the causation of this disease. The site selected was very well drained, freely exposed to sunlight and winds, and, from every point of view, satisfactory for the purposes intended.

The personnel of this camp consisted of two medical officers, Dr. Roger P. Ames, Acting Assistant-Surgeon, U. S. A., an immune, in immediate charge; Dr. R. P. Cooke, Acting Assistant-Surgeon, U. S. A., non-immune; one acting hospital steward, an immune; nine privates of the hospital corps, one of whom was immune, and one immune ambulance driver.

For the quartering of this detachment, and of such non-immune individuals as should be received for experimentation, hospital tents, properly floored, were provided. These were placed at a distance of about twenty feet from each other, and were numbered 1 to 7 respectively.

Camp Lazear was established Nov. 20, 1900, and from this date was strictly quarantined, no one being permitted to leave or enter camp except the three immune members of the detachment and the members of the Board. Supplies were drawn chiefly from Columbia Barracks, and for this purpose a conveyance under the control of an immune acting hospital steward, and having an immune driver, was used.

A few Spanish immigrants recently arrived at the Port of Havana, were received at Camp Lazear, from time to time, while these observations were being carried out. A non-immune person, having once left this camp, was not permitted to return to it under any circumstances whatever.

The temperature and pulse of all non-immune residents were carefully recorded three times a day. Under these circumstances any infected individual entering the camp could be promptly detected and removed. As a matter of fact only two persons, not the subject of experimentation, developed any rise of temperature; one, a Spanish immigrant, with probably commencing pulmonary tuberculosis, who was discharged at the end of three days; and the other, a Spanish immigrant, who developed a temperature of 102.6 F. on the afternoon of his fourth day in camp. He was at once removed with his entire bedding and baggage and placed in the receiving ward at Columbia Barracks. His fever, which was marked by daily intermissions for three days, subsided upon the administration of cathartics and enemata. His attack was considered to be due to intestinal irritation. He was not permitted, however, to return to the camp.

No non-immune resident was subjected to inoculation who had not passed in this camp the full period of incubation of yellow fever, with one exception, to be hereinafter mentioned.

OBSERVATIONS.

Having thus sufficiently indicated the environment of Camp Lazear and the conditions under which its residents lived, we will now proceed to a narration of the observations thus far made at this experimental station. At the time these inoculations were begun, the several tents were occupied as follows: Tent No. 1 by 1 immune and 1 non-immune; No. 2 by 1 immune and 2 non-immunes; No. 3 by 2 immunes; No. 4 by 3 non-immunes; No. 5 by 3 non-immunes; No. 6 by 2 non-immunes; and No. 7 by 1 non-immune.

For the purpose of experimentation subjects were selected as follows: from Tent No. 2, 2 non-immunes, and from Tent No. 5, 3 non-immunes. Later, 1 non-immune in Tent No. 6 was also designated for inoculation.

Case 1.—Private John R. Kissinger, Hospital Corps, U. S. A., aged 23, a non-immune, occupant of Tent No. 2, with his full consent, was bitten at 10.30 a. m., Nov. 20, 1900, by a mosquito —C. fasciatus—that had bitten a severe case of yellow fever on the fifth day, eleven days previously; another severe case, on the third day, six days before, and a third severe one on the third day, three days before. As Kissinger had not absented himself from Columbia Barracks for a period of more than thirty days, it was considered safe to inoculate him without waiting for his period of incubation to pass.

Nov. 23, 1900, Kissinger was again bitten by the same mosquito. The result of both inoculations was negative. The mosquito, therefore, was incapable of conveying any infection on the eleventh or fourteenth day after it had bitten a severe case of yellow fever on the third day of the disease. This insect had been kept at ordinary room temperature and died November 26, 1900.

Dec. 5, 1900, at 2 p. m., twelve days after the last inoculation, Kissinger was again bitten by five mosquitoes—C. fasciatus—two of which had bitten fatal cases of yellow fever, on the second day, fifteen days before; one a severe case on the second day, nineteen days previously, and two a mild case on the third day, twenty-one days before.

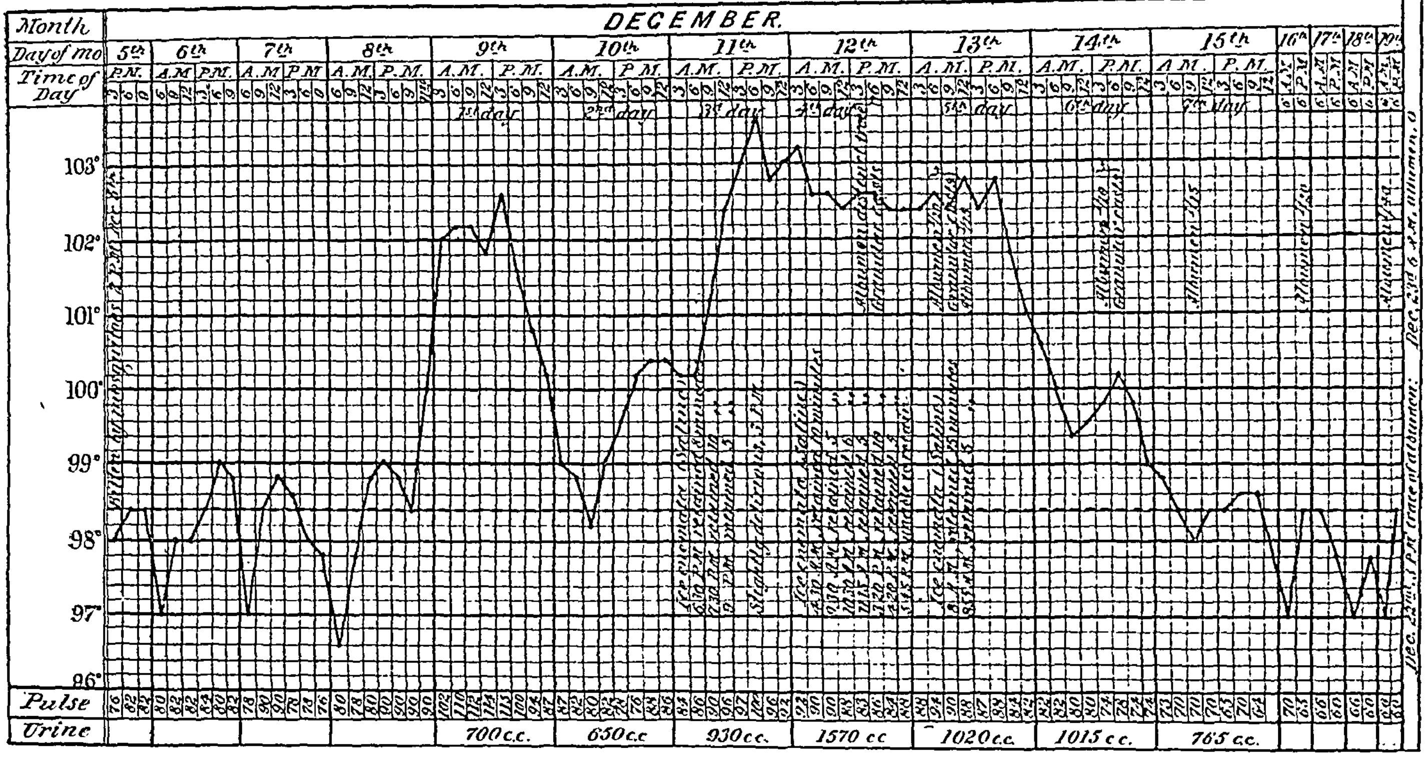
The record of temperature and pulse, taken every three hours, following this inoculation, showed that the subject remained in his usual state of health during the following three days, except that on December 8, on the third day, Kissinger had slight vertigo, upon rising, which soon passed away. At 4.30 p. m.—commencement of fourth day—he complained of frontal headache; otherwise he felt well and partook of supper with appetite; at 9 p.m., temperature was 98.4 F., pulse 90; at 11.30 p. m., he awoke with a chill, his temperature 100 F., pulse 90; he complained of severe frontal headache and backache; his eyes were injected and his face suffused. December 9 at 3 a. m., his temperature was 102 F., pulse 102; he had violent headache and backache with nausea and vomiting. He was then removed to the yellow fever wards. His subsequent history was that of a case of yellow fever at moderate severity. Albumin appeared in the urine on the fourth day, increased to one-fifth by volume on the sixth day and disappeared on December 22. Granular casts were present in considerable numbers from the fourth to the eighth day. The conjunctivæ were jaundiced on the third day. The diagnosis of yellow fever in this case was made by Drs. Juan Guitéras, Carlos Finlay, W. C. Gorgas, and A. Diaz Albertini, the board of yellow fever experts of the city of Havana, who saw the patient on several occasions during his illness. (See Chart I.) The period of incubation in this case was 3 days, 9½ hours.

Case 2.—John J. Moran, aged 24, an American, non-immune occupant of Tent No. 2, with his full consent, was bitten at 10 a. m., Nov. 26, 1900, by a mosquito—C. fasciatus—which twelve days before had bitten a case of yellow fever of moderate severity, on the third day of the disease. This insect had also bitten a well-marked case of yellow fever—second day—ten days previously.

Yellow fever, produced by the bite of Culex fasciatus

Chart I.

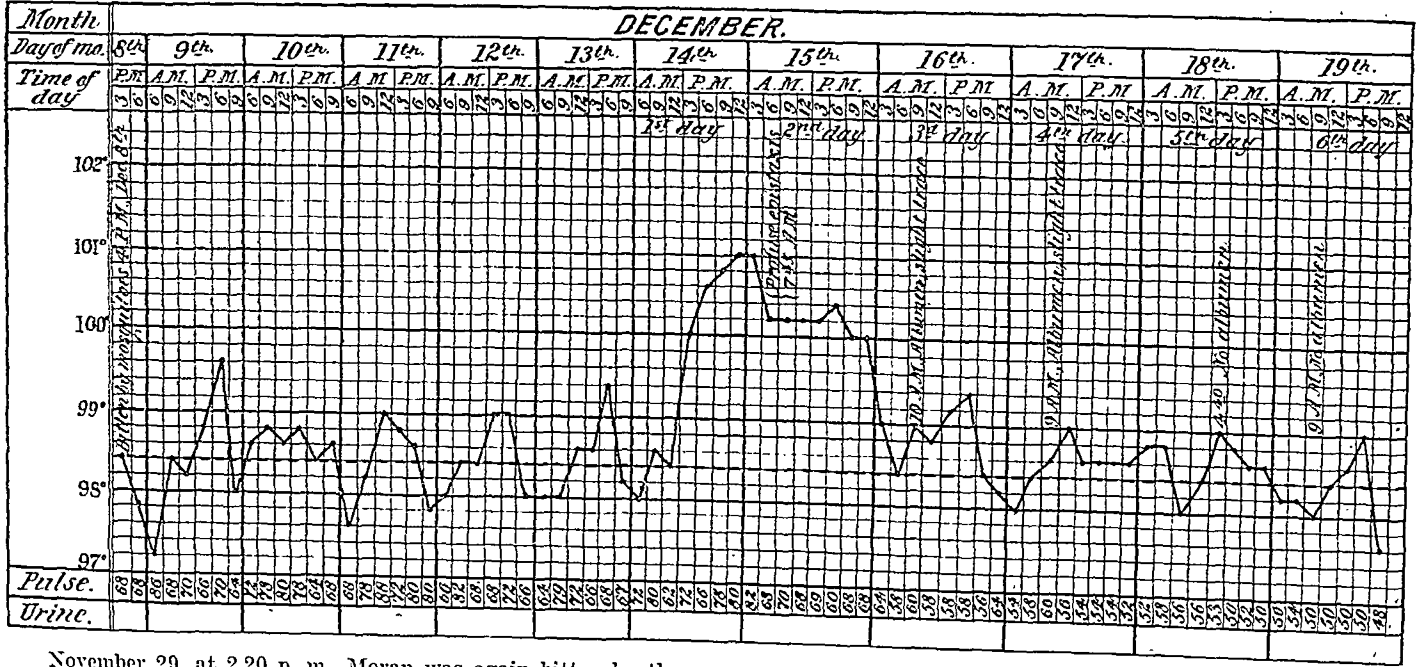
Period of incubation, 3 days 9½ hours.



Yellow fever, produced by the bite of Culex fasciatus.

Chart II.

Period of incubation, 4 days 20 hours.



November 29, at 2.20 p. m., Moran was again bitten by the same mosquito. The result of both of these inoculations was negative. This insect was, therefore, incapable of conveying the infection fifteen days after having bitten a case of yellow fever of moderate severity on the third day, and thirteen days after it had bitten a well-marked case of this disease on the second day. This mosquito had been kept at room temperature. Moran's case will be again referred to when we come to speak of the infection of a building by means of contaminated mosquitoes.

Case 3.—A Spanish immigrant, aged 26, a non-immune occupant of Tent No. 5, with his full consent, was bitten at 4 p. m., Dec. 8, 1900, by four mosquitoes—C. fasciatus—which had been contaminated as follows: one by biting a fatal case of yellow fever, on the third day, seventeen days before; one a severe one, on the third day, eighteen days before; one a severe case, on the second day, twenty-two days before, and one a case of moderate severity, on the third day, twenty-four days previously.

The record of temperature and pulse, taken every three hours after the inoculation, shows no rise of temperature above 99 F. until 6 p. m., December 13, on the sixth day, when 99.4 F. is recorded; pulse 68. The subject, who was of a very lively disposition, retained his usual spirits until noon of the 13th, although he complained of slight frontal headache on the 11th and 12th. He took to his bed at noon of the 13th, the fifth day, complaining of increased frontal headache and a sense of fatigue. At 9 p. m., his temperature was 98.2 F., pulse 62.

December 14, at 6 a. m., temperature was 98 F., pulse 72, and he still complained of frontal headache and general malaise. Profuse epistaxis occurred at 7.45 a. m.; at 9 a. m., temperature was 99.6 F., pulse 80; at 1.15 p. m., temperature was 100 F., pulse 80, and he complained of a sense of chilliness, with frontal headache increased, and slight pain in the back, arms and legs; at 3 p. m., temperature was 100 F., pulse 80; at 4.15 p. m., temperature 100.7 F., pulse 68; his face flushed and eyes congested. He was removed to the yellow fever wards. A trace of albumin was found in the urine passed at 3.30 p. m., December 15; a few hyaline cases were present. He was seen at this time by the Havana board of experts and the diagnosis of mild yellow fever confirmed. (See Chart No. 2.)

The period of incubation in this case was four days and twenty fours, counting from the time of inoculation to the hour when the patient took to his bed; if reckoned to the onset of fever, it was 5 days and 17 hours.

Case 4.—A Spanish immigrant, aged 27, a non-immune occupant of Tent No. 5, with his full consent, was bitten at 10 a.m., Nov. 26, 1900, by a mosquito—C. fasciatus—which had bitten a severe case of yellow fever, on the second day, ten days before. Three days later, November 29, he was again bitten by the same insect. December 2, after an interval of three days, he was again bitten by the same insect, and also by a second mosquito—C. fasciatus—which, twelve days before, had been contaminated by biting a fatal case of yellow fever on the third day. No unfavorable effects followed any of these attempted inoculations. The first-mentioned mosquito, therefore, was incapable of conveying any infection on the seventeenth day after biting a severe case of yellow fever on the second day; the other also failed to infect on the twelfth day after biting a fatal case of yellow fever on the third day. Both of these mosquitoes had been kept at ordinary room temperature.

December 9, after an interval of seven days, the subject was again bitten, at 10.30 a. m., by one mosquito—C. fasciatus—which had been infected nineteen days before by biting a fatal case of yellow fever on the second day of the disease. He remained in his usual health until 9 a.m., December 12, the third day, when he complained of frontal headache; his temperature was 98.8 F., pulse 96. This headache continued during the entire day. At 6 p.m., temperature was 99 F., pulse 94; at 9 p. m., temperature 99 F., pulse 84; at 9.30 p. m., temperature 99.4 F., pulse 82. Severe headache and backache was complained of; his eyes were injected and his face suffused. The following morning he was sent to the yellow fever wards. Urine passed at 4.20 p. m., December 15, the third day, gave a distinct trace of albumin. Many hyaline casts were present on the same date. The conjunctivæ were jaundiced on the third day.

The patient was seen by the board of experts on December 14, and the diagnosis of yellow fever made. (See Chart No. 3.)

The period of incubation in this case was 3 days, 11½ hours.

Case 5.—A Spanish immigrant, aged 26, a non-immune occupant of Tent No. 5, with his full consent, was bitten at 10 a.m., Nov. 26, 1900, by a mosquito—C. fasciatus—that had bitten a well-marked case of yellow fever, on the third day, twelve days before. November 29 he was again bitten by the same insect. December 2 he was for the third time bitten by two mosquitoes—C. fasciatus—both of which had bitten a well-marked case of yellow fever, on the third day, eighteen days before. As no bad results followed any of these inoculations, it follows that these mosquitoes were incapable of conveying any infection eighteen days after they had bitten a well-marked case of yellow fever on the third day. Both of these insects had been kept at room temperature.

December 11, after an interval of nine days, the subject was again, at 4:30 p.m., bitten by the same mosquitoes, four in number, that had been applied to Case 3, three days prior to this time, with positive results.

The record of temperature and pulse, taken every three hours following the inoculation, showed no change till December 13, the second day, at 9 a.m., when the temperature was 99 F., and the pulse 78. From this hour till 6 p.m. the temperature varied from 99.2 to 99.6 F. The subject complained of frontal headache, slight in degree, during the entire day. At 9 p.m. his temperature was 98.4 F., pulse 62.

December 14, the third day, he complained of slight frontal headache during the entire day, and was indisposed to exertion. From 6 a.m. to 6 p.m. the temperature averaged 99.2 F., and the pulse varied from 64 to 90; at 9 p.m. it was 98.4 F., the pulse 78. December 15, the fourth day, at 6 a.m., temperature was 98.2 F., pulse 78. He still had frontal headache. At 9 a.m., temperature was 99.2 F., pulse 80; at 12, noon, the former was 99.2 F., the pulse 74. The subject now went to bed, complaining of headache and pains throughout the body. At 2 p.m., the temperature was 100 F., the pulse 80; eyes much congested; face flushed. At 6 p.m. his temperature had risen to 102 F., and the pulse to 90. He was then transferred to the yellow fever wards. Albumin appeared in the urine at 7:30 a.m., December 17. Bleeding from the gums and roof of the mouth occurred on the sixth and seventh days of his illness.

This case was examined by the board of experts on the 16th and 19th, and the diagnosis of yellow fever made.

Albumin disappeared on the sixth day, the temperature falling to normal on this date, and remaining near this point till December 23, the ninth day of sickness, when a relapse occurred, attended with bleeding from the gums on December 24 and 25, with the appearance of red blood cells and pus cells in the urine in moderate numbers. Fever subsided on December 26, and the urine became normal on December 29. (See Chart iv.)

The period of incubation in this case, if reckoned from the time of inoculation to the hour when the patient took to his bed, was 3 days, 19½ hours.

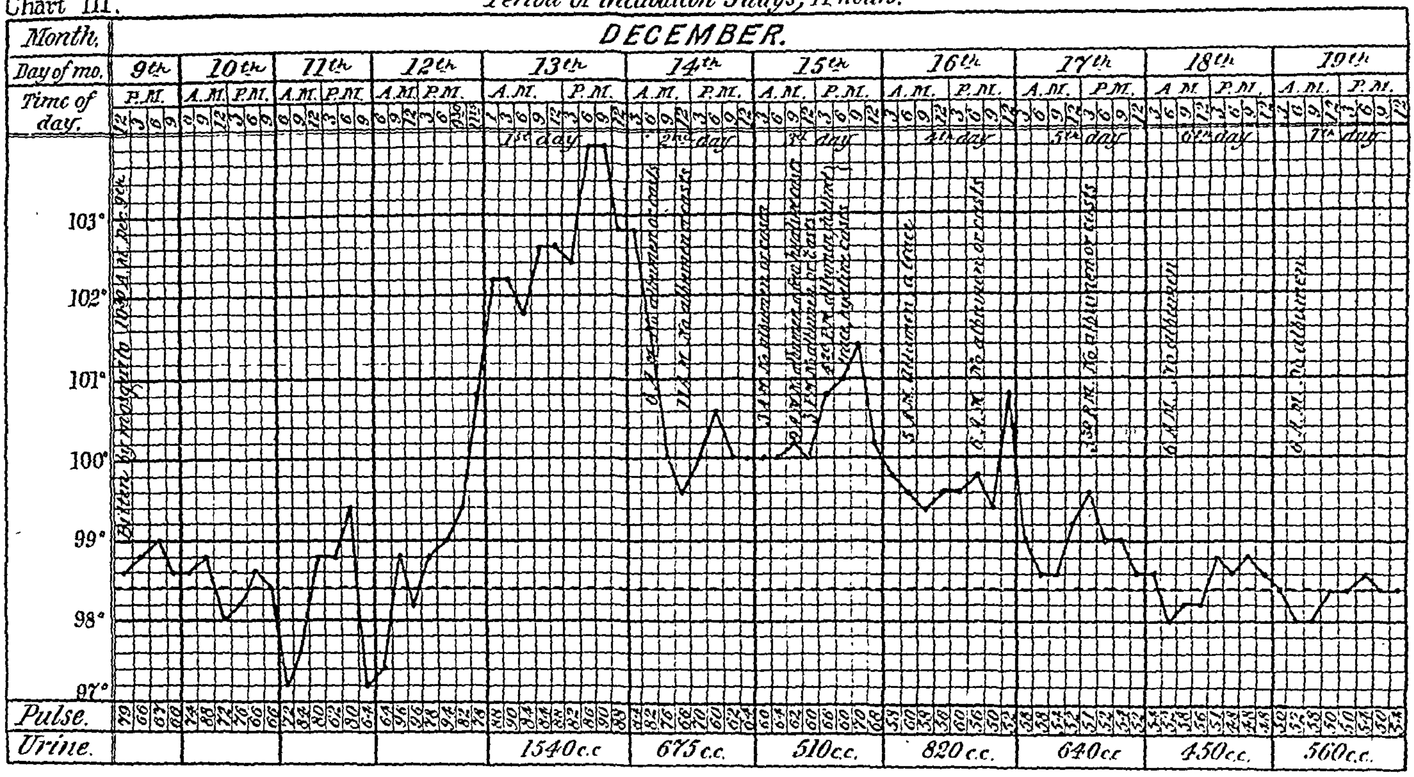
The four patients whose histories we have given above were also examined by a number of physicians of Havana, among whom we may mention Dr. Bango, of "La Covadonga," Dr. Sanchez, of "La Benéfica," and Dr. Moas, of "La Purissima Concepcion," by all of whom the diagnosis of yellow fever was confirmed. Let us now rapidly review the circumstances attending these cases of experimental yellow fever, in order to emphasize certain points of interest and importance in connection with their occurrence. (We omit any reference to the clinical histories.)

It should be borne in mind that at the time when these inoculations were begun, there were only 12 non-immune residents at Camp Lazear, and that 5 of these were selected for experiment, viz., 2 in Tent No. 2, and 3 in Tent No. 5. Of these we succeeded in infecting 4, viz., 1 in Tent No. 2 and 3 in Tent No. 5, each of whom developed an attack of yellow fever within the period of incubation of this disease. The one negative result, therefore, was in Case 2—Moran—inoculated with a mosquito on the fifteenth day after the insect had bitten a case of yellow fever on the third day. Since this mosquito failed to infect Case 4, three days after it had bitten Moran, it follows that the result could not have been otherwise than negative in the latter case. We now know, as the result of our observations, that in the case of an insect kept at room temperature during the cool weather of November, fifteen or even eighteen days would, in all probability, be too short a time to render it capable of producing the disease.

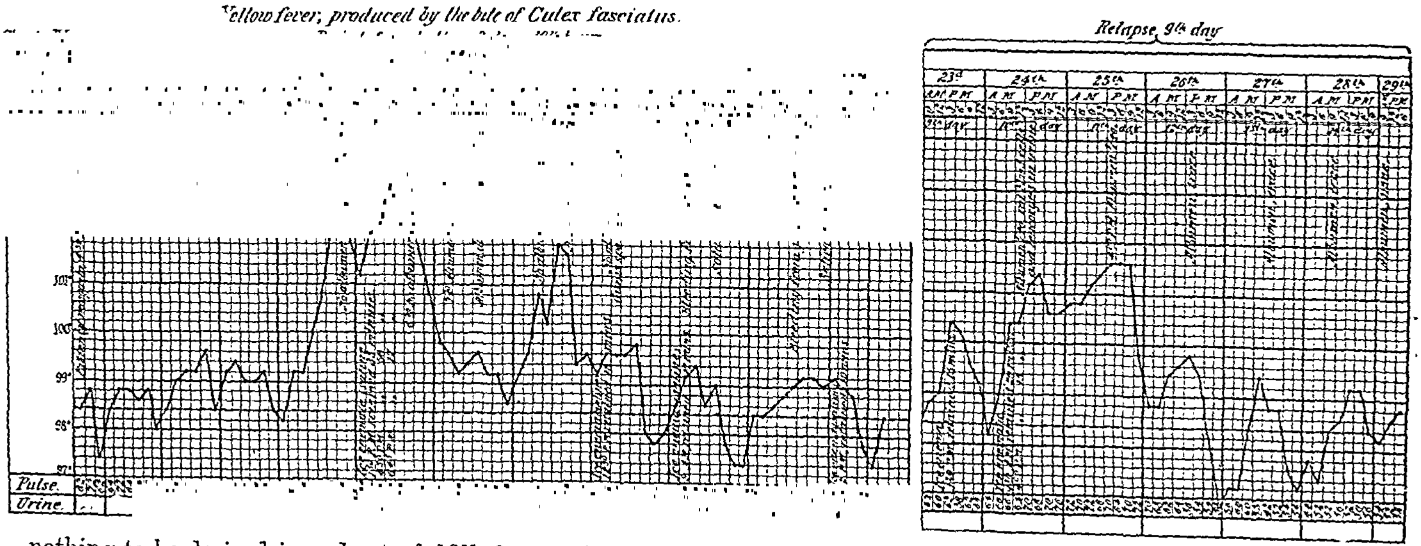
As bearing upon the source of infection, we invite attention to the period of time during which the subjects had been kept under rigid quarantine, prior to successful inoculation, which was as follows: Case 1, fifteen days; Case 3, nine days; Case 4, nineteen days; Case 5, twenty-one days. We further desire to emphasize the fact that this epidemic of yellow fever, which affected 33.33 per cent. of the non-immune residents of Camp Lazear, did not concern the 7 non-immunes occupying Tents No. 1, 4, 6 and 7, *but was strictly limited to those individuals who had been bitten by contaminated mosquitoes.*

Yellow fever produced by the bite of Culex fasciatus.

Chart III. *Period of incubation 3 days, 11 hours.*



Yellow fever, produced by the bite of Culex fasciatus.



Nothing could point more forcibly to the source of this infection than the order of the occurrence of events at this camp. The precision with which the infection of the individual followed the bite of the mosquito left nothing to be desired in order to fulfill the requirements of a scientific experiment.

The epidemic having ceased on Dec. 15, 1900, no other case of yellow fever occurred in this camp until we again began to expose individuals to inoculation. Thus fifteen days later we made the following observation:

Case 6.—A Spanish immigrant, aged 27, a non-immune occupant of Tent No. 6, with his full consent, was bitten at 11 a.m., Dec. 30, 1900, by four mosquitoes—C. fasciatus—that had been contaminated seventeen days previously by biting a mild case of yellow fever on the first day of the disease (Case 4). These insects had been kept at a temperature of 82 F.

The subject remained in his normal condition until the evening of Jan. 2, 1901, the third day, when he complained of frontal headache. At 6 p.m., his temperature was 99 F., pulse 64. He slept well, but still complained of headache on the following morning, January 3. He partook sparingly of breakfast, and afterward lay on his bed, being disinclined to exert himself. At 9 a.m., the temperature was 99 F., the pulse 96; at 10:30 a.m., temperature 100 F., pulse 80. A sense of chilliness and sharp frontal headache was complained of, and at 3 p.m. his temperature was 100.8 F., his pulse 89, and his eyes were congested and face flushed. He was removed to the yellow fever wards. A specimen of urine passed at midnight, January 4, contained a distinct trace of albumin. Slight bleeding from the gums occurred on the fifth and sixth days. The patient was seen by the board of experts on the second and seventh days of his attack, and the diagnosis of yellow fever confirmed. (See Chart v.)

The period of incubation in this case was three days, 22½ hours. The subject had remained in strict quarantine for twenty-two days preceding his inoculation.

In considering the character of the attacks and the course of the disease in these five cases of experimental yellow fever, it must be borne in mind that these infected individuals were all young men, in good general physical condition and placed amid excellent hygienic surroundings. Further, it must not be forgotten that, upon the earliest manifestation of an approaching infection, they were each and all put to bed at once, and were even carried to the yellow fever wards while occupying the same bed. In other words, these men were kept at absolute rest from the first inception of the disease. Just what bearing this may have had on the subsequent course of the fever, we can not say, but since so much stress is laid on absolute rest of the patient by those having most experience in the treatment of yellow fever, the influence of this enforced rest, in our cases, upon the subsequent course of the attack, was doubtless of much importance. We reserve a consideration of the clinical side of these cases for a future report.

In our opinion the experiments above described conclusively demonstrate that an attack of yellow fever may be readily induced in the healthy subject by the bite of mosquitoes—C. fasciatus—which have been previously contaminated by being fed with the blood of those sick with yellow fever, provided the insects are kept for a sufficient length of time after contamination before being applied to the person to be infected.

Our observations do not confirm Finlay's statement that the bite of the mosquito may confer an abortive attack of yellow fever, when applied to the healthy subject two to six days after it has bitten a yellow fever patient. We have always failed to induce an attack, even of the mildest description, when we have used mosquitoes within less than twelve days from the time of contamination, although the insects were constantly kept at summer temperature. We could cite instances where we have applied mosquitoes at intervals of two, three, four, five, six, nine, and eleven days following the contamination of the insect with the blood of well-marked cases of yellow fever, early in the disease, without any effect whatever being produced by the bite. Thus in one case no result followed the bite of fourteen mosquitoes which four days previously had been contaminated by biting a case of yellow fever on the first day. Again, seven days later, or eleven days after contamination, the surviving seven of these insects failed to infect an individual. On the seventeenth day after contamination, however, the bite of four of these mosquitoes—all that remained of the original fourteen—was promptly followed by an attack of yellow fever in the same individual. These insects had been kept, during the whole of this time, at an average temperature of 82 F.

Our observations would seem to indicate that after the parasite has been taken into the mosquito's stomach, a certain number of days must elapse before the insect is capable of re-conveying it to man. This period doubtless represents the time required for the parasite to pass from the insect's stomach to its salivary glands, and would appear to be about twelve days in summer weather, and most probably about eighteen or more days during the cooler winter months. It follows, also, that our observations do not confirm Finlay's opinion that the bite of the contaminated mosquito may confer immunity against a subsequent attack of yellow fever. In our experience, an individual may be bitten on three or more occasions by contaminated mosquitoes without manifesting any symptoms of disturbance to health, and yet promptly sicken with yellow fever within a few days after being bitten by an insect capable of conveying the infection.

ACQUIREMENT OF THE DISEASE.

Having shown that yellow fever can be conveyed by the bite of an infected mosquito, it remains to inquire whether this disease can be acquired in any other manner. It has seemed to us that yellow fever, like the several types of malarial fever, might be induced by the injection of blood taken from the general circulation of a patient suffering with this disease. Accordingly we have subjected four individuals to this method of infection, with one negative and three positive results. Reserving the detailed description of these cases to a subsequent occasion, we may state that in one of the positive cases, an attack of pronounced yellow fever followed the subcutaneous injection of 2 c.c. of blood taken from a vein at the bend of the elbow, on the first day of the disease, the period of incubation being three days and twenty-two hours; in the second case, 1.5 c.c. of blood, taken on the first day of the disease, and injected in the same manner, brought about an attack within two days and twelve hours; while in our third case, the injection of 0.5 c.c. of blood taken on the second day of the disease, produced an attack at the end of forty-one hours.

In the case mentioned as negative to the blood injection, the subsequent inoculation of this individual with mosquitoes already proved to be capable of conveying the disease, also resulted negatively. We think, therefore, that this particular individual, a Spanish immigrant, may be considered as one who probably possesses a natural immunity to yellow fever.

It is important to note that in the three cases in which the injection of the blood brought about an attack of yellow fever, careful cultures from the same blood, taken immediately after injection, failed to show the presence of Sanarelli's bacillus.[2]

Our observations, therefore, show that the parasite of yellow fever is present in the general and capillary circulation, at least during the early stages of this disease, and that the latter may be conveyed, like the malarial parasite, either by means of the bite of the mosquito, or by the injection of blood taken from the general circulation.

CAN YELLOW FEVER BE PROPAGATED IN ANY OTHER WAY?

We believe that the general consensus of opinion of both the medical profession and the laity is strongly in favor of the conveyance of yellow fever by fomites. The origin of epidemics, devastating in their course, has been frequently attributed to the unpacking of trunks and boxes that contained supposedly infected clothing; and hence the efforts of health authorities, both state and national, are being constantly directed to the thorough disinfection of all clothing and bedding shipped from ports where yellow fever prevails. To such extremes have efforts at disinfection been carried, in order to prevent the importation of this disease into the United States, that, during the epidemic season, all articles of personal apparel and bedding have been subjected to disinfection, sometimes both at the port of departure and at the port of arrival; and this has been done whether the articles have previously been contaminated by contact with yellow fever patients or not. The mere fact that the individual has resided, even for a day, in a city where yellow fever is present, has been sufficient cause to subject his baggage to rigid disinfection by the sanitary authorities.

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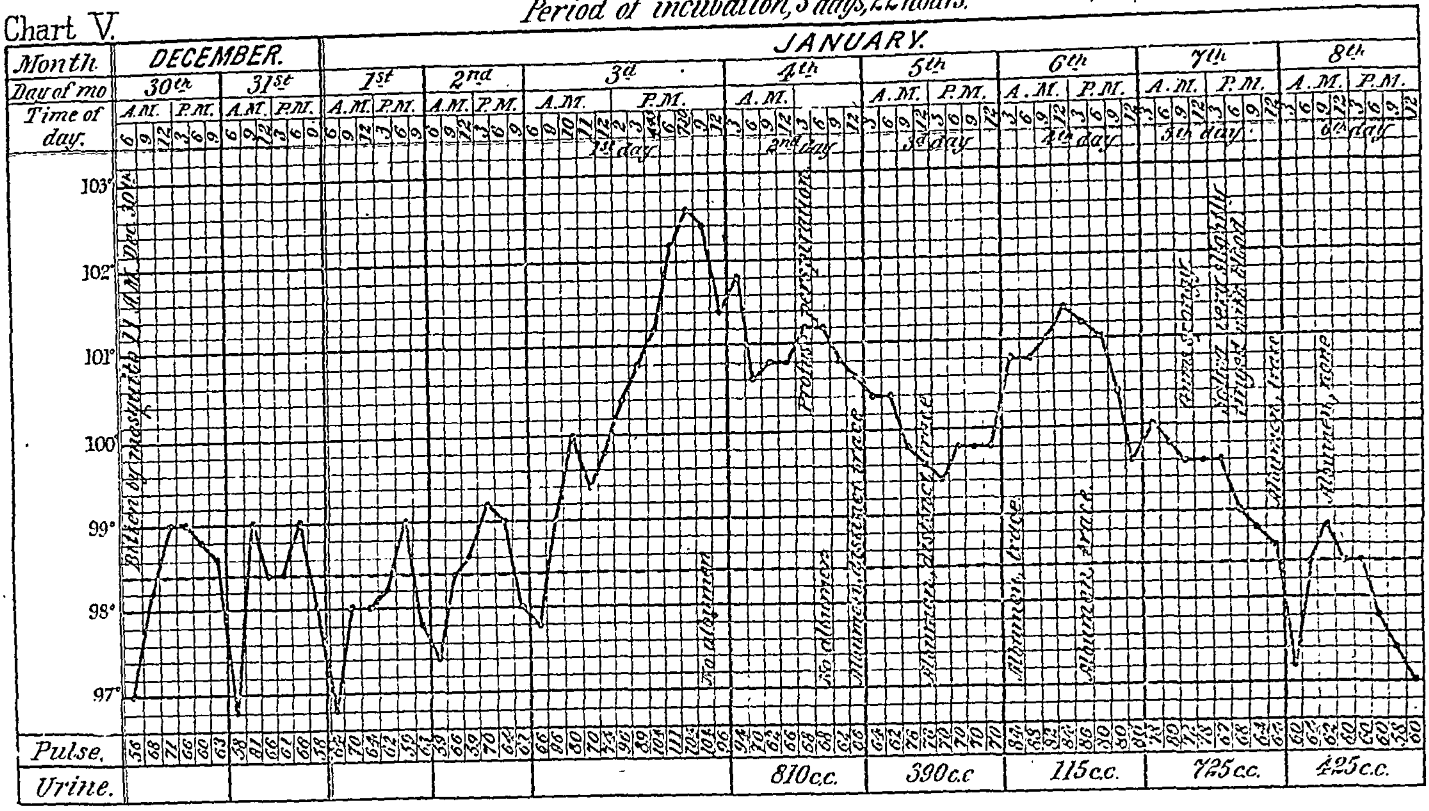
[2] A fourth case of yellow fever, severe in type, has been produced by the subcutaneous injection of 1 c.c. of blood taken from the general circulation on the second day of the disease, the period of incubation being three days and one hour. The patient from whom the blood was obtained was an experimental case which was in turn produced by the injection of blood—0.5 c.c.—derived from a non-experimental case of fatal yellow fever. As "controls," Cases 1, 4, 6 and 7 of this report were also injected subcutaneously with 1 c.c. of the same blood without manifesting any symptoms whatever. The blood which produced this fourth case of yellow fever, when transferred at the same time to bouillon tubes in considerable quantities, gave no growth whatever.

To determine, therefore, whether clothing and bedding, which have been contaminated by contact with yellow fever patients and their discharges, can convey this disease is a matter of the utmost importance.

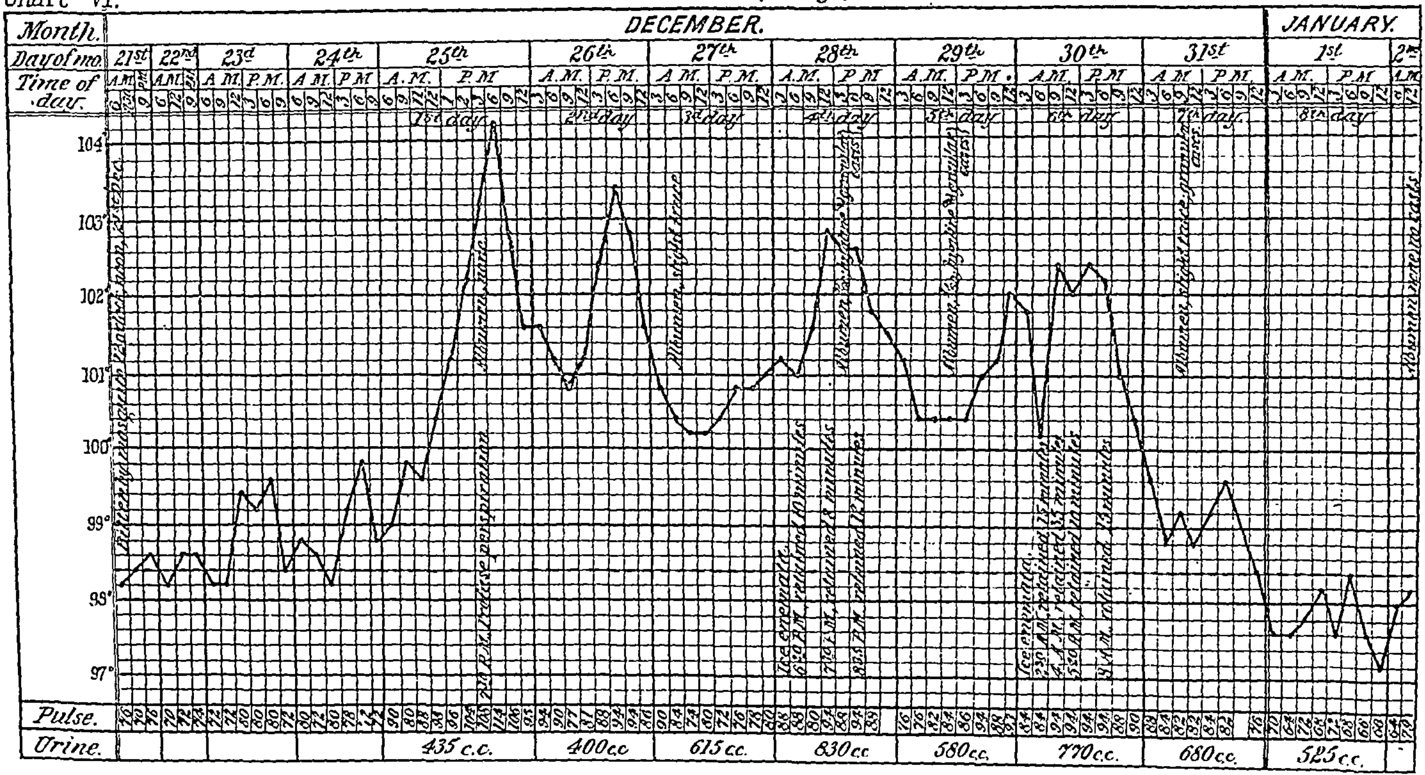
Yellow fever, produced by the bite of Culex fasciatus.
Period of incubation, 3 days, 22 hours.

Chart V.



Yellow fever, produced by the bite of Culex fasciatus.
Period of incubation, 3 days, 23 hours.

Chart VI.



Although the literature contains many references to the failure of such contaminated articles to cause the disease, we have considered it advisable to test, by actual experiment on non-immune human beings, the theory of the conveyance of yellow fever by fomites, since we know of no other way in which this question can ever be finally determined.

For this purpose there was erected at Camp Lazear a small frame house consisting of one room 14x20 feet, and known as "Building No. 1," or the "Infected Clothing and Bedding Building." The cubic capacity of this house was 2800 feet. It was tightly ceiled within with "tongue and grooved" boards, and was well battened on the outside. It faced to the south and was provided with two small windows, each 26x34 inches in size. These windows were both placed on the south side of the building, the purpose being to prevent, as much as possible, any thorough circulation of the air within the house. They were closed by permanent wire screens of .5 mm. mesh. In addition sliding glass sash were provided within and heavy wooden shutters without; the latter intended to prevent the entrance of sunlight into the building, as it was not deemed desirable that the disinfecting qualities of sunlight, direct or diffused, should at any time be exerted on the articles of clothing contained within this room. Entrance was effected through a small vestibule, 3x5 feet, also placed on the southern side of the house. This vestibule was protected without by a solid door and was divided in its middle by a wire screen door, swung on spring hinges. The inner entrance was also closed by a second wire screen door. In this way the passage of mosquitoes into this room was effectually excluded. During the day, and until after sunset, the house was kept securely closed, while by means of a suitable heating apparatus the temperature was raised to 92 to 95 F. Precaution was taken at the same time to maintain a sufficient humidity of the atmosphere. The average temperature of this house was thus kept at 76.2 F. for a period of sixty-three days.

Nov. 30, 1900, the building now being ready for occupancy, three large boxes filled with sheets, pillow-slips, blankets, etc., contaminated by contact with cases of yellow fever and their discharges were received and placed therein. The majority of the articles had been taken from the beds of patients sick with yellow fever at Las Animas Hospital, Havana, or at Columbia Barracks. Many of them had been purposely soiled with a liberal quantity of black vomit, urine, and fecal matter. A dirty "comfortable" and much-soiled pair of blankets, removed from the bed of a patient sick with yellow fever in the town of Quemados, were contained in one of these boxes. The same day, at 6 p.m., Dr. R. P. Cooke, Acting Assistant-Surgeon, U. S. A., and two privates of the hospital corps, all non-immune young Americans, entered this building and deliberately unpacked these boxes, which had been tightly closed and locked for a period of two weeks. They were careful at the same time to give each article a thorough handling and shaking in order to disseminate through the air of the room the specific agent of yellow fever, if contained in these fomites. These soiled sheets, pillow-cases and blankets were used in preparing the beds in which the members of the hospital corps slept. Various soiled articles were hung around the room and placed about the bed occupied by Dr. Cooke.

From this date until Dec. 19, 1900, a series of twenty days, this room was occupied each night by these three non-immunes. Each morning the various soiled articles were carefully packed in the aforesaid boxes, and at night again unpacked and distributed about the room. During the day the residents of this house were permitted to occupy a tent pitched in the immediate vicinity, but were kept in strict quarantine.

December 12, a fourth box of clothing and bedding was received from Las Animas Hospital. These articles had been used on the beds of yellow fever patients, but in addition had been purposely soiled with the bloody stools of a fatal case of this disease. As this box had been packed for a number of days, when opened and unpacked by Dr. Cooke and his assistants, on December 12, the odor was so offensive as to compel them to retreat from the house. They pluckily returned, however, within a short time and spent the night as usual.

December 19 these three non-immunes were placed in quarantine for five days and then given the liberty of the camp. All had remained in perfect health, notwithstanding their stay of twenty nights amid such unwholesome surroundings.

During the week, December 20-27, the following articles were also placed in this house, viz.: pajamas suits, 1; undershirts, 2; night-shirts, 4; pillow-slips, 4; sheets, 6; blankets, 5; pillows, 2; mattresses, 1. These articles had been removed from the persons and beds of four patients sick with yellow fever and were very much soiled, as any change of clothing or bed-linen during their attacks had been purposely avoided, the object being to obtain articles as thoroughly contaminated as possible.

From Dec. 21, 1900, till Jan. 10, 1901, this building was again occupied by two non-immune young Americans, under the same conditions as the preceding occupants, except that these men slept every night in the very garments worn by yellow fever patients throughout their entire attacks, besides making use exclusively of their much-soiled pillow-slips, sheets and blankets. At the end of twenty-one nights of such intimate contact with these fomites, they also went into quarantine, from which they were released five days later in perfect health.

From January 11 till January 31, a period of twenty days, "Building No. 1" continued to be occupied by two other non-immune Americans, who, like those who preceded them, have slept every night in the beds formerly occupied by yellow fever patients and in the night-shirts used by these patients throughout the attack, without change. In addition, during the last fourteen nights of their occupancy of this house they have slept, each night, with their pillows covered with towels that had been thoroughly soiled with the blood drawn from both the general and capillary circulation, on the first day of the disease, in the case of a well-marked attack of yellow fever. Notwithstanding this trying ordeal, these men have continued to remain in perfect health.

The attempt which we have therefore made to infect "Building No. 1," and its seven non-immune occupants, during a period of sixty-three days, has proved an absolute failure. We think we can not do better here than to quote from the classic work of La Roche.[3] This author says: "In relation to the yellow fever, we find so many instances establishing the fact of the non-transmissibility of the disease through the agency of articles of the kind mentioned, and of merchandise generally, that we can not but discredit the accounts of a contrary character assigned in medical writings, and still more to those presented on the strength of popular report solely. For if, in a large number of well authenticated cases, such articles have been handled and used with perfect impunity—and that, too, often under circumstances best calculated to insure the effect in question—we have every reason to conclude, that a contrary result will not be obtained in other instances of a similar kind; and that consequently the effect said to have been produced by exposure to those articles, must—unless established beyond the possibility of doubt—be referred to some other agency.

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[3] R. La Roche: Yellow Fever, vol. ii, p. 516, Philadelphia.

The question here naturally arises: How does a house become infected with yellow fever? This we have attempted to solve by the erection at Camp Lazear of a second house, known as "Building No. 2," or the "Infected Mosquito Building." This was in all respects similar to "Building No. 1," except that the door and windows were placed on opposite sides of the building so as to give through-and-through ventilation. It was divided, also, by a wire-screen partition, extending from floor to ceiling, into two rooms, 12x14 feet and 8x14 feet respectively. Whereas, all articles admitted to "Building No. 1" had been soiled by contact with yellow fever patients, all articles admitted to "Building No. 2" were first carefully disinfected by steam before being placed therein.

On Dec. 21, 1900, at 11.45 a.m., there were set free in the larger room of this building fifteen mosquitoes—C. fasciatus—which had previously been contaminated by biting yellow fever patients, as follows: 1, a severe case, on the second day, Nov. 27, 1900, twenty-four days; 3, a well-marked case, on the first day, Dec. 9, 1900, twelve days; 4, a mild case, on the first day, Dec. 13, 1900, eight days; 7, a well-marked case, on the first day, Dec. 16, 1900, five days—total, 15.

Only one of these insects was considered capable of conveying the infection, viz., the mosquito that had bitten a severe case twenty-four days before; while three others—the twelve-day insects—had possibly reached the dangerous stage, as they had been kept at an average temperature of 82 F.

At 12, noon, of the same day, John J. Moran—already referred to as Case 2 in this report—a non-immune American, entered the room where the mosquitoes had been freed, and remained thirty minutes. During this time he was bitten about the face and hands by several insects. At 4.30 p.m., the same day, he again entered and remained twenty minutes, and was again bitten. The following day, at 4.30 p.m., he, for the third time, entered the room, and was again bitten.

Case 7.—On Dec. 25, 1900, at 6 a.m., the fourth day, Moran complained of slight dizziness and frontal headache. At 11 a.m. he went to bed, complaining of increased headache and malaise, with a temperature of 99.6 F., pulse 88; at noon the temperature was 100.4 F., the pulse 98; at 1 p.m., 101.2 F., the pulse 96, and his eyes were much injected and face suffused. He was removed to the yellow fever wards. He was seen on several occasions by the board of experts and the diagnosis of yellow fever confirmed. (See Chart 6.)

The period of incubation in this case, dating from the first visit to "Building No. 2," was three days and twenty-three hours. If reckoned from his last visit it was two days and eighteen hours. There was no other possible source for his infection, as he had been strictly quarantined at Camp Lazear for a period of thirty-two days prior to his exposure in the mosquito building.

During each of Moran's visits, two non-immunes remained in this same building, only protected from the mosquitoes by the wire-screen partition. From Dec. 21, 1900, till Jan. 8, 1901, inclusive—eighteen nights—these non-immunes have slept in this house, only protected by the wire screen partition. These men have remained in perfect health to the present time.

December 28, after an interval of seven days, this house was again entered by a non-immune American, who remained twenty-five minutes. The subject was bitten by only one insect. The following day he again entered and remained fifteen minutes, and was again bitten by one mosquito. The result of these two visits was entirely negative. As the mortality among the insects in this room, from some unknown cause, had been surprisingly large, it is possible that the subject was bitten by insects not more than thirteen days old, in which case they would probably not infect, since they had been kept for only five days at a temperature of 82 F., and for eight days at the mean temperature of the room, 78 F.

Be this as it may, nothing can be more striking or instructive as bearing upon the cause of house infection in yellow fever, than when we contrast the results obtained in our attempts to infect Buildings No. 1 and No. 2; for whereas, in the former *all* of seven non-immunes escaped the infection, although exposed to the most intimate contact with the fomites for an average period of twenty-one nights each; in the latter, an exposure, reckoned by as many minutes, was quite sufficient to give an attack of yellow fever to one out of two persons who entered the building—50 per cent.

Thus at Camp Lazear, of 7 non-immunes whom we attempted to infect by means of the bites of contaminated mosquitoes, we have succeeded in conveying the disease to 6, or 85.71 per cent. On the other hand, 7 non-immunes whom we tried to infect by means of fomites, under particularly favorable circumstances, we did not succeed in a single instance. Out of a total of 18 non-immunes whom we have inoculated with contaminated mosquitoes, since we began this line of investigation, 8, or 44.4 per cent., have contracted yellow fever. If we exclude those individuals bitten by mosquitoes that had been kept less than twelve days after contamination, and which were, therefore, probably incapable of conveying the disease, we have to record eight positive and two negative results—80 per cent.

CONCLUSIONS.

1. The mosquito—C. fasciatus—serves as the intermediate host for the parasite of yellow fever.

2. Yellow fever is transmitted to the non-immune individual by means of the bite of the mosquito that has previously fed on the blood of those sick with this disease.

3. An interval of about twelve days or more after contamination appears to be necessary before the mosquito is capable of conveying the infection.

4. The bite of the mosquito at an earlier period after contamination does not appear to confer any immunity against a subsequent attack.

5. Yellow fever can also be experimentally produced by the subcutaneous injection of blood taken from the general circulation during the first and second days of this disease.

6. An attack of yellow fever, produced by the bite of the mosquito, confers immunity against the subsequent injection of the blood of an individual suffering from the non-experimental form of this disease.

7. The period of incubation in thirteen cases of experimental yellow fever has varied from forty-one hours to five days and seventeen hours.

8. Yellow fever is not conveyed by fomites, and hence disinfection of articles of clothing, bedding, or merchandise, supposedly contaminated by contact with those sick with this disease, is unnecessary.

9. A house may be said to be infected with yellow fever only when there are present within its walls contaminated mosquitoes capable of conveying the parasite of this disease.

10. The spread of yellow fever can be most effectually controlled by measures directed to the destruction of mosquitoes and the protection of the sick against the bites of these insects.

11. While the mode of propagation of yellow fever has now been definitely determined, the specific cause of this disease remains to be discovered.

[For discussion see p. 461.]

THE METRIC SYSTEM.*

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"Frenchmen have beheaded their king, declared there is no God, and are now trying to enforce the metric system!" said a member of the English parliament in the course of an alleged argument against the system. This is a fair sample of the arguments advanced against it. It is not my purpose to make any extended argument in favor of it, taking it for granted that The Association is already, theoretically at least, converted to it. If there are any who are still in doubt upon the subject, I ask them to consider the following résumé:

The system is recommended: 1, because it is simple; 2, it saves time; a good authority on the subject estimates that its employment would save one year of school life for each child; 3, it is cosmopolitan; 4, it is scientific; 5, it is in use in the United States Coast Survey Service, in the Marine-Hospital Service and in the U. S. Navy.

Against its use are the following considerations: 1, it discards an old and familiar system; 2, it is impossible to forget the old system; 3, the accuracy of the standard meter has been questioned by some mathematicians.

Leaving the question here, I propose to consider its present status in the medical profession, and suggest some measures that would hasten its general adoption. Although legalized in 1866, and advocated by a very large majority of the scientific men of the country, a very small number of medical men make use of it to-day. After a somewhat extended investigation in regard to its use in Boston and vicinity, I am of the opinion that Whelply, of St. Louis, was entirely safe when he made the statement in Washington recently that 5 per cent. or less of those writing prescriptions to-day employ the decimal notation.

An inquiry regarding the standing of the men using the metric system was universally answered by the statement that they are the leading men in the profession. So I am inclined to think that while numerically the percentage is perhaps disappointingly small, if we consider quality rather than quantity the showing is quite satisfactory. And when we consider the radical nature of the change, and that natural inertia of which we are all more or less victims, perhaps we shall agree that the progress is as great as we could reasonably expect.

What can we do as individuals to increase this percentage? First, learn to think in the new system, and teach others to do the same. Just so long as we spend our time comparing the new system with the old, and devising rules for their easy interconversion, just so long shall we make slow progress. The equivalent of a grain in terms of the new system is, in my judgment, enough to remember, and when the new system is fully established, forget even that.

There are, besides this individual action, three important factors that would help to a solution of the problem. Let the Association of Medical Colleges and the Pharmaceutical Association, and the Association of Dental Schools, insist that hereafter no one shall receive a degree either in medicine, dentistry or pharmacy, until he has a working knowledge of the system. Let all three associations urge on the writers of text-books the exclusive use of the system. Let the manufacturers of pharmaceutical products label their packages exclusively in the new system. If these conditions could be fulfilled, a tremendous stride would be made toward the universal use of the metric system. Of these three propositions, I am inclined to think the latter is the most important. So universal has become the use of tablets, that if they were all labeled as suggested, almost every practicing physician would be taking daily lessons. In talking with drug houses on this subject, they say if it could be brought about by general agreement, it would be a good thing, but if one or two firms only should adopt the plan, loss of trade is feared. E. R. Squibb & Sons have for many years adopted this method, and the firm deserves much credit, not only for this, but for their persistent and intelligent presentation of the subject in their publications.

DISCUSSION.

Dr. E. H. Bartley, of New York City, by invitation, opened the discussion. He has been using the metric system in writing his prescriptions for twenty years, and adopted a prescription blank with a vertical line near the right hand margin, to take the place of the decimal point. To the left of this line he had printed "gram," and, to the right, "milligram," and is in the habit of filling out all the three places, if necessary, using ciphers. He uses only these two denominations. He thinks the use of the terms centigram and decigram is confusing and unnecessary and they ought to be dropped. Having been a chemist before he studied medicine, he has learned to use the metric system, prefers it for prescription writing, and has always used it. He has learned the doses of remedies in the English system, and has continued to do so because it is difficult to carry in the mind the doses in two different systems and it increases the danger of errors. He thinks it much safer, for the present at least, to carry in the mind the dosage in grains and minims and make the conversion at the time of writing the prescription. This is very easy if we adopt the plan of always writing for two, three, or four ounces. When he first began writing prescriptions, he learned a rule which has worked very well, *viz.: In 60 c.c., or ℥ii, the number of* grams to be written for will equal the number of grains or minims of the active ingredient in each teaspoonful of the mixture. Thus, if you wish to give ten grains of iodid of potassium at a dose, you would write

Potassii iodidi	10|000
Aquæ q. s. ad	60|000

M. ft. sol. To be given in dram doses.

Each dram contains ten grains of the salt. This prescription contains fifteen doses. In a three-ounce mixture, or 90 c.c., the number of grams to be taken would be 1½ times the dose, and in a four-ounce mixture, 120 c.c., it would be double the dose, in grains, in each dram, or just equal to it if the dose be increased to two drams, or a dessertspoonful.

As regards the liability of mistakes on the part of the pharmacist in dispensing a prescription written in metric form, he has only twice in twenty years, had a pharmacist make a mistake in the quantity prescribed. In one case the pharmacist put in double the quantity of water ordered, and the patient got less than the prescribed dose, and the other was similar to it. But the danger of this is getting less every year. The pharmaceutical schools now make the use of the metric system compulsory with their students, so that all druggists will soon be familiar with it, and the danger, from their side, will become extremely small. The dangers even now are very little from that source. The only one is that arising from physicians attempting to translate from one system to the other; but by adopting the method just described, there can be very little danger from that side.

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Prof. Jos. P. Remington, Philadelphia—With regard to the remark just made about teaching the metric system in pharmaceutical schools, in the College of Pharmacy of Philadelphia, the metric system is used almost exclusively. In the laboratory work no other is used. One point raised in the paper was the question of competency of the pharmacist and his liability to error; every educated pharmacist throughout the country would fill the prescriptions in the metric system just as well as by the old method. In 1890, the United States Pharmacopeia introduced in its liquid formulæ the metric system, so that the use of this system is extending. The great difficulty is in getting physicians to abandon the old and take up the new. In Germany, the matter was regulated by law and physicians were given one year in which to learn the metric system, and were obliged to use it thereafter; but we can not adopt such summary methods in this country.

Dr. Frank Woodbury, Philadelphia, said that he thought that the decimal point and the ciphers repelled many physicians, and the adoption of the plan of writing quantities in grams, centigrams and milligrams in whole numbers, without the use of the decimal point, might greatly assist the transition from the old to the new and reduce the liability to error.

Dr. J. N. Upshur, Richmond, Va., wished to say very emphatically that what Dr. Wheatley said about the indolence of old doctors is true; in this connection, he was much impressed with the truth of the saying that you can not teach an old dog new tricks. Speaking for himself, he did not believe that he could learn that metric system, and carry it into effect in writing his prescriptions, without killing somebody. At the same time he urges his students to learn the metric system. His son, who uses it in the U. S. Marine-Hospital Service, complains of the unprogressiveness of the druggists in his locality, which compel him to write his prescriptions for his private patients in the old system.

Dr. F. G. Wheatley, in closing, said that the point raised that the writing of ciphers constituted an objection was not very practical. His own method is to only keep two denominations in mind, the grams and the centigrams, just as we have dollars and cents. Notwithstanding what had just been said, he thinks that it is the physicians who are at fault in this matter. The druggists who have graduated during recent years say that when they graduated they knew nothing about any other system than the metric, but they had to learn the old method on account of the prescriptions received. The fault lies with the teachers in the medical colleges. As long as the text-books teach both systems, the average physician will learn the old and leave the new.

EVOLUTIONAL AND INVOLUTIONAL TYPES OF MENTAL AND NERVOUS DISEASE.*

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The different epochs of life are factors of great moment both in the production and in the exacerbation of nervous instability. They are rarely passed through, even in the most healthy individual, without some psychical or physical manifestation. Each crisis in life determines new impulses, new thought, and new actions, which give each epoch a distinct physiology and psychology. We purpose to discuss in this paper the effect these periods have upon the brain and nervous constitution, considering chiefly the minor and transient disorders influenced or excited by them, and to attempt to explain the preventive measures necessary and advisable, possible and ideal, which may determine their development. The territory that we especially wish to cover shades insensibly into the two extremes, mental soundness and mental disease. This borderland is especially important on acount of the fact that the psychoses as a rule gradually pass through a prodromic stage of nervous instability or one of recedent psychical action instead of being ushered in or terminated abruptly. Such conditions are psychopathic, but can not be grouped under the psychoses *sensu strictiori*. There is no disease which does not alter the mental state of the patient, nor is there any one whose physical state is not influenced by his mental condition. We desire to emphasize this point, as it illustrates a common law of cause and effect present in many disorders. The brain then controls the body just as much as physical states influence the mental. Each successive epoch adds a new burden upon the nervous system, and in unstable individuals it is only a question of time until the inherited instability reveals itself. The types of each period differ according to the intensity and rapidity of incidence and the physical manifestations. Nevertheless the disturbances do not include any disorder which can not be caused by other factors also. As an etiologic classification, however, we are justified in grouping them in this manner.

In childhood inherited strain is rarely noticed. At this period there is great difficulty in determining what is physiologic and what is psychologic. For instance, every experienced mother knows that a child does not always reveal a tired condition by a desire to sleep and a feeling of listlessness, but often by excitability and restlessness. When irritability and peevishness is observed as a result of physical exhaustion, we must regard it as evidence of the influence of physical states upon mental conditions, though it is natural and not pathologic. When threats of whipping, etc., are added to this, we find an artificially produced nervous instability with conditions of anxiety predominating, expressed by night terrors, loss of appetite, restlessness, etc

Mental exhaustion may, however, without any such stimulus as whipping, terminate in diseased over-exhaustion. Here also irritability is the chief sign, but it is more marked than in the common evening exhaustion or is accompanied by other phenomena, particularly if a nervous taint is inherited. The child becomes quarrelsome, envious and imperious, or is timid and anxious, awkward and easily moved to tears. It tires easily, but does not sleep readily, tosses around, emits a shrill cry in its sleep, or talks to itself and does not awake refreshed as do normal children. These symptoms are too often looked upon as being due to gastric disturbances, without any efforts being made to combat them, and are allowed to take their course. It is unmistakably a diseased type of exhaustion, expressed in a transient disturbance of physical and mental functions.

Another condition at this period, due to inherited strain, is morbid depression. Children of this type are always reserved and gloomy, precocious and hypersensitive. In some this condition only exists in the early morning for a short time after awakening. This transient depression or melancholy is the precursor of melancholia in the adult.

We have in childhood different dislikes identical with those in adults, but which are often mistakenly supposed to be natural in children.

A child who may have been bathed many times before without evincing any signs of fear, may suddenly become restless when immersed, crying and drawing up its legs, as if in pain. It may be due to many causes and always demands investigation. More easily recognized and more common is the fear of being alone. In some, of course, this is due to the mother or nurse spoiling the child, but in others it comes on suddenly without any such cause and may be indicative of some general nervous disorder. Fear of strangers is also not always physiologic. Every physician can probably recall some child formerly friendly to him who suddenly became fretful and cried at his approach, who steadily refused to allow him to touch it, and in time acted similarly to all except its mother, the latter being compelled to stay with it constantly until as suddenly as it came, the fear vanished.

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The best known form of infantile fear is pavor nocturnus. As this is generally so pronounced as to be a true psychosis, it will only be lightly touched upon. The onset of the nervous storm in such children can generally be predicted. Such a child is paler than usual, more irritable, can not go to sleep unless its mother is with it, and awakes as soon as she attempts to leave. Close observation will reveal some muscular twitchings, which increase in intensity, until suddenly the outburst comes on, during which the child may even be in a condition of transient mania. Nightmare must, however, not be confused with these night terrors.

Transient exaltation of spirits is common in children. Anticipation of the slightest pleasure will make its eyes sparkle, make it become restless and babble incessantly, cause it to laugh unceasingly and act somewhat as does an adult under the influence of alcohol. Parents generally stand complacently observing it and do not seek to repress this unnatural excitation until suddenly the picture changes. The child becomes listless, cries, and upon being taken to bed tosses about, and after it has gone to sleep, awakes frequently with a cry of anxiety.

A child who has inherited a neurotic constitution is generally below the normal weight and is apt to be precocious. Even the laity is apt to be suspicious of a too bright mind in a frail body. It may be due to malnutrition, rachitis, etc., or to the fact that the parents are small in stature and that the psychic life has simply been developed too early. But most often a neurotic taint is back of it.

Single nervous symptoms observed at this period are senseless laughter, a staring look, twitchings of the facial muscles, spasms, both local and general, stammering and stuttering, and strabismus. These symptoms may occur particularly during teething. A healthy child generally teethes without trouble. But when the nervous resistance is congenitally weak, the physical strain makes excessive demands upon the nervous system whose instability then manifests itself. Such children reveal their "nervousness" in other ways. Their facial color may rapidly change from bloom to pallor, they vomit easily, cry in their sleep, are domineering, early learn to comprehend spoken language and have pronounced retentive powers. Such symptoms reveal a nervous temperament. When in addition we find stubbornness, viciousness and perverse habits, as instinctive masturbation, it reveals an inherited taint in addition to a nervous temperament. When we also find the so-called stigmata of degeneration, we are dealing with a case of congenital degeneration. No single symptom, however, proves anything; it is only by a combination of symptoms that we can determine such conditions. As the child grows older, other neurotic manifestations may come on. These include a marked and unexplainable anemia, nervous snuffling, peculiar stubborn headaches and slight variations of character, mentation and habits occurring periodically.

The older the child is the more diverse are the conditions found, environmental influences being added to the autochthonous. This is the period of life when hypochondriac ideas, excessive desire for order and cleanliness and even religious exaltation first become evident.

The earlier the signs of nervous disturbance occur, the more frequent and pronounced they are, the more probable is the belief that they are due to congenital degeneration. It is natural, therefore, to find the hereditary ataxias and muscular atrophies, Thompson's disease (toxemic?) at this period of life.

The next period of life, the school or prepubescent age, is very similar, except that the physiologic and pathologic states are more difficult to separate. Emotion is no longer supreme, the muscular system now asserts itself, and the faculty of judgment and cognition comes into play. Children at this age are able to facilitate as well as to hinder the development of their faculties, and parents may consciously or unconsciously inculcate bad habits in their children by example or by improper methods of training and discipline. Chorea, "insanity of the muscles," is the type of motor disturbance and is found at this age; also petit mal, unconscious automatism or somnambulism, and migraine. The brain is now rapidly developing and the cortex is asserting itself. Muscular impulses dominate the scene and hence the nervous disorders are largely muscular.

The signs of degeneration noticed are flat-pointed teeth, hacking cough, a capricious appetite, and a scanty urine. The objective signs are slowness in movement, stooping, and twitching. We can at this age already observe a tendency to neurasthenia or hysteria, one child having hysteric tendencies, another neurasthenic.

In this period the influence of school-life is the most important factor. Incomplete development, undue sensitiveness, excessive restlessness, the frequent and perplexing changes from one room and teacher to another with entirely different methods, the exactions demanded by educators in their senseless rivalry, the anxiety attendant upon competition for prizes, etc., have a harmful result upon the pupils. There are, of course, some advantages in our system. A timid child becomes accustomed to association with strangers, peculiarities are influenced and often repressed through the ridicule of classmates, improper home training is counteracted, the energy of a child is turned into a particular channel, an irregular life is made methodical, carefulness tends to replace carelessness, etc. But under our present system, where the mental capacity of all children is regarded as equal, and the mental energy is drained to the last drop, in accordance with the forcing process now in vogue, which uses up all reserve power and inhibits the growth of other parts of the brain and prevents the preparation of the body for the momentous crises of life which are yet to come, all the advantages are multiplied. "There is no time nor place of organic repentance provided by nature for some of the sins of the schoolmaster."

The next period of life embraces puberty and adolescence. We include these two epochs in one because they are so intimately associated, one being the termination of the other. Before this time boys and girls are much alike, they are not very different sexually, mentally, or physically; then they gradually develop sexually, and finally mentally; the boy comes to use his judgment and reasoning powers more and more, and the girl becomes more impulsive and emotional. This is not an abrupt change, but is only accomplished after the lapse of some years. The emotions of a girl up to her 21st year are not stable or deep-seated and are soon forgotten; her conversation only then becomes coherent, her actions womanly. A boy becomes manly at about his 24th year, commences then to become precise and settled and deliberate.

Inasmuch as this is the period when the mind develops, it follows that inherited mental characteristics would now show themselves, perhaps for the first time, or more strongly than before. This is, then, the time when we expect hysteria and hemicrania, epilepsy, innate immorality and arrested development, to show themselves. Clouston includes acne, ugliness, many forms of impaired vision, and perhaps phthisis and acute rheumatism as neuroses of this period, but why I do not see. Eccentricity and incompatibility of temper, sexual aversion and religious asceticism, decrease of volitional power, reveal themselves during this period. Many of the first convictions for crime are in those of the adolescent age.

Many diverse factors now come into play. The combat with the outer world begins in earnest; the ability for self-culture and self-responsibility increases; production replaces acquisition. The transition from childhood to this period in woman occurs with the interaction of certain periodical changes which strongly influence the mind. These may come on early or late. It is an unfavorable sign if they come on long after the development of the mind. The effects of an improper education, sexual desires, the emotional development with its alternate display of fear, hope, and disappointment, the indulgence in religious contemplation, the fostering of egotism and self-introspection, the exhaustion attendant upon the exacting duties of social life with its balls, theaters and parties, the daily tyrannizing of an overstrict and zealous father, with perhaps compulsory attendance at church and forced restraint in all daily actions, are the forces at work at this period. The onset of a hysteric attack can often be traced to the preparation for confirmation. In males this is the age when sexual abuse and alcoholism assert their sway and play havoc with the system. The strain of making up new functions is such a burden that it takes little more to upset the system.

The next period, that of adult life, including pregnancy, lactation and parturition in woman is a momentous one. This is a time of trial to a female, even though she is not congenitally predisposed to instability. Reproduction of the species, although it is the duty of women, is likewise a menace to her health. Pregnancy generally evokes mental depression, irresistible longings, irritability, foolish jealousy, anxiety, etc. Hysteric symptoms are also prone to occur at this time. Similar occurrences take place in childbirth and lactation. Chorea and hebephrenia are also common during this time. In the male, family cares, business worries; political, church and social duties; alcoholism and syphilis, and business speculation combine to keep up a ceaseless cerebral congestion. Neurasthenia is for this reason the nervous disease of adult manhood. We may find also eccentricities of character, curious habits, recurrent attacks of depression or of forced gaiety, and in luetic individuals the syphilitic nervous diseases.

Suppression of the menses in females causes many nervous symptoms, particularly stupor, listlessness and headache. Illicit intercourse generally produces pathologic mental changes in woman and if children are begotten the shame and distress often suffice to produce a transient mania.

With the cessation of the power for reproduction, vital energy is lessened. Unstable nervous systems are just as apt to be upset by the process of decadence as they were in their development. The body loses in weight, the circulation slows up, the lymphatic and arterial systems commence to degenerate, the emotions quiet down, the imaginative power disappears, the mental processes alter, etc. These changes do not take place quickly, but cover some years. In woman the disappearance of menses is not coincident with the climacteric. We may find in females at this period, supersensitiveness, sleeplessness, depression of spirits, different phobias and general apathy, and in both sexes, various trophic disturbances. In men the climacteric is not as definite or as complete and occurs later and more gradually than in women. The mental alterations are therefore rarely as pronounced, irritability and a transient depression of spirits are all that is noticed. This is the time of life when cerebral hemorrhage and encephalomalacia are prone to occur.

Physiologic senility is not only slow and insidious in its onset, but has no set time for its occurrence. In general we may say that it commences when atheroma and arcus senilis comes on. Boy-Tessir well says that "the coefficient of the organic faculties varies for each individual. Each by reason of his lessened organic resistance carries from birth a certain predisposition to disease, that is to say, a special grouping of lessened organic resistance upon which depend the time of the appearance of senescence." All functions suffer except that of reproduction, which answers to laws of its own. The springy step, the elastic frame, the lustrous hair, the quick mind become things of the past. The process of thought, though still deliberate and accurate, becomes less rapid, and the association paths seem to become less responsive to the will. The organs become sluggish in action and more susceptible to disease; co-ordinated movements are more difficult; all thoughts, tastes, habits approach again those of youth.

Senility becomes abnormal, according to Clouston, if hereditary cerebral weakness exists, if the brain has been overtaxed, or if its blood-vessels become diseased. Motor impairment is characteristic of this period, revealing itself in paralysis agitans and similar disorders. The melancholia which is often observed is not a "conscious sensitive mental pain, but an automatic motor misery." In others again we find a transient mania due to sudden alterations of the cerebral circulation and to vasomotor paralysis.

Senile abnormalities are however, when not so pronounced as these three types, difficult to distinguish from the physiologic occurrences of senility, because the latter themselves consist in mental and motor changes which at other times of life would be considered abnormal. The senile speech so characteristic of this period, the loss of ideation and of affection, the lessened memory and concentration of thought which are found in physiologic senility, render it difficult to draw appropriate conclusions. But in general, when excessive volubility, desire for unfit marriages, peculiar perversities of temper, wandering tendencies and restlessness—the normal senile always desires rest—indifference, carelessness in habits and hypochondriacal ideas are found, we can regard senescence as having exceeded its physiologic limits.

DISCUSSION.

Dr. Gregg, Hollins, Va.—I wish to express my own peculiar views in regard to what was said in connection with the evolution of nervous disease from its mental aspect. I have never believed in mental evolution. I can conceive of no evolution of mind, but only of organic evolution. I can conceive of nervous evolution. I can understand brain development; improvement of the various centers of the brain. I understand improvement in the intellectual centers of the brain, the psychic centers; but I can not understand any evolution, or impairment or advancement in mind, and I believe we often confound mental and cerebral functions. I can understand how machinery can be perfected for the application of the power of electricity, and a very ordinary machine can be converted into a very fine machine, but this would not be the evolution of electricity.

Dr. Edward E. Mayer—I confess my inability to exactly understand the gentleman; it seems to me that he is indulging in a play of words. I wish that he would exactly define what he means by mental functions and by cerebral functions. He assuredly has not in mind the old metaphysical views on this question. The mental functions must certainly develop with the development of the mind. The mind of a child is perfectly blank, and to a certain extent we can write on it what we wish. The older it becomes, the more developed its brain is; the more receptive is its mind. The doctor's comparison with a machine is rather inappropriate in our estimation. We are not dealing with material actions or products, but with chemic and vital forces. At the present day, metaphysical abstractions are certainly not in place among a body of physicians.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.*

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CHICAGO.

The experimental work forming the basis of this article was undertaken with the view of studying the changes resulting from anastomosing the ureters with the intestinal tract, and of determining whether the procedure could with safety be employed in human beings. The labors of other experimenters in this field have abundantly demonstrated that in dogs, at least, the large bowel can be employed as a receptacle for urine and the animal have good control over its anal sphincter, and liquid feces be evacuated at regular intervals without resulting proctitis. But the more important and far-reaching changes in the kidneys and ureters, resulting from the bacterial invasion from the septic cavity into which the ureteral orifices open, has not been satisfactorily studied.

Will infection of the kidney invariably follow its ureteral union with the intestine? If this be true, can perfection of operative technique reduce this infection to a minimum, so that the kidney can recover and remain a useful organ? To the thoughtful, conscientious surgeon these questions are paramount, and must be carefully answered before he decides to subject his patient to an operation from which, once performed, there is no retreat.

My work, as the title indicates, has been in two directions: First, I have carefully, and I trust exhaustively, gone over the literature of the subject. This was a task of considerable magnitude, as some of the cases were hidden away in transactions or obscure reports. In many instances the original had been quoted incorrectly and the error handed down from one writer to another. In most instances the abstracts have been made from the original sources, or, at least, the original has been gone over carefully to verify the abstract. I have endeavored to arrange the material in such a form as to be of service to future investigators.

The second portion of the article is devoted to my own experiments, from which, together with the work of others, my general conclusions are drawn.

From a historical standpoint Richardson's[83] case merits the first consideration, since it is the only one of its kind on record. The case was reported in the "Philosophical Transactions" in the year 1713, and is as follows:

"One John Woosnape, of North Bierly, a poor boy, lived till he was 17 years of age and never made water, and yet was very healthy, vigorous, and active. He had constantly diarrhea on him, but without much uneasiness. The obstruction must have been in the kidneys, for he never had any inclination to make water. The serous part of the blood, which should have been thrown off by the urine, was discharged by the celiac and mesenteric arteries by the mediation of the glands into the guts. He died of a fever."

It is certainly difficult to decide from this report whether the author actually saw or only heard of the case. At any rate, from a scientific standpoint it is practically useless, and certainly does not warrant the deduction that the human being can live seventeen years with a blending of the urinary and intestinal tracts. Yet, after a mention of the cloaca in certain animals, and deducing from this that the same condition may be produced in man and be compatible with life, certain writers have endeavored to clinch the argument by referring to Richardson's case. That some of them have never read the original is apparent, from the fact that the reference is incorrectly given.

ANIMAL EXPERIMENTS IN URETERO-INTESTINAL ANASTOMOSIS.

Can the results of animal experimentation with uretero-intestinal anastomosis be used to advantage in establishing the place of the operation in human surgery?

In a general way this query can be answered in the affirmative. In spite of the technical difficulties of the operation in an animal, such as the dog, it is possible to so perfect the technique as to greatly reduce the primary mortality, and the same may be said of the operation in man. Gross errors in technique should not be counted in determining the value of the operation either in animals or human beings. While it may be true, as claimed by some, that the human kidney is a more highly developed organ than is that of the dog, it is true only to a limited extent that its power of resisting infection is thereby greater.

Various objections to animal experimentation as a test of the value of uretero-intestinal implantation in man have been raised, but they can not be said to be upheld by facts. Certainly the upright or prone position can have absolutely no influence on the action of the colon bacillus in producing an ascending pyelonephritis. A septic cavity, such as the rectum, is filled with myriads of these bacteria, and no action of gravity or the mere flushing out of this cavity can make it aseptic to any appreciable degree. Nor is it at all probable that the colon bacillus in the dog's rectum is any more virulent than the same germ in the human intestine.

Yet all these theories have been advanced to explain the cause of the failures on the experimenter's part. A careful study of the literature of the subject as well as the results of my own experimental work have con-ed me that identical changes take place in both ani- s and man when the ureters are anastomosed with intestinal tract. Hence, I have by means of brief racts placed the work of other experimenters in this d in such a form as to be readily available to the dent of the subject.

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* Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

LÜCK AND ZELLER,[7] 1881. *Four dogs; both ureters in um; death from peritonitis from giving way of sutures.* retero-intestinal anastomosis in animals dates from the at-mpts of these experimenters to implant the ureters in the tum after removal of the bladder in dogs. Different thods of disposal of the ureters were studied. They succeeded in saving a number of animals where the ureters, either alone or with the trigonum, were fastened in the abdominal incision, but the attempts to anastomose the ureters with the rectum were complete failures. In these last experiments, after removal of the bladder and careful hemostasis, the rectum was incised for 3 or 4 cm. and both ureters secured in the incision by a row of Lembert's sutures. In all four dogs operated on the sutures gave way, with resulting peritonitis and urinary infiltration. In the case of one dog, which lived four days, it is noted that the evacuations were thin and mixed with the urine.

BARDENHAUER,[1] 1886. *Single ureter implanted extraperitoneally in five dogs, with three recoveries; uretero-intestinal stenosis; dilatation of ureters, hydronephrosis, pyelitis, and pyonephrosis.* Bardenhauer experimented on five dogs by exposing extraperitoneally the ascending and descending colon and corresponding ureters. The ureter was then divided and drawn over a curved needle. The needle was made to penetrate the posterior wall of the colon and brought out again 1.5 cm. below the point of entrance. The bowel was invaginated at the site of the puncture and the ureter held in place by sutures, which united the borders of the invaginated portion. The end of the ureters which presented at the deeper opening was cut off and slipped back into the lumen of the bowel and the second opening closed by suture. The operation is mentioned as difficult, owing to the thinness of the ureteral walls, yet in three cases was successful. Two of the surviving animals were killed after four weeks. The union of the ureter with the rectum was perfect, but at the site of the operation there was cicatricial contraction, together with dilatation of the ureters and hydronephrosis. The third dog was allowed to live a year. Toward the last the animal's stools were copious and bloody. The post-mortem showed pyelitis and pyonephrosis.

NOVARO,[16] 1887. *Three dogs, one recovery; both ureters in rectum; one killed at end of four months; ureteral orifices patent; one kidney normal; other dilated from stenosis.* Novaro reported the pathological findings in a dog in which the ureters had been implanted in the rectum four months previously. Two other dogs failed to survive the operation. The animal passed all his urine by the rectum, was continent, and remained well up to the time of his death. The bladder had shrunk to the size of a hazlenut and the ureteral orifices were patent. The right ureter and kidney were normal; the left ureter and corresponding kidney were dilated, probably from a stenosis of the uretero-rectal opening. The rectal wall showed no changes except muscular hypertrophy. From these findings Novaro recommended the operation, and emphasized the fact that it would be much less formidable in man on account of the larger caliber of the ureters and the possibility of employing more stringent antisepsis.

I have been unable to consult Novaro's original article. Van Hook, in speaking of the paper, says that "a microscopic examination of the kidneys was made. The testimony of the pathologist who made the examination is not absolutely unequivocal as to the inflammatory changes, and no bacteriologic examination of the mucous membrane of the pelves of the kidneys and the mucous membrane of the ureters was recorded."

TUFFIER,[23] 1880. *Two dogs; single ureter in rectum; death in four days from peritonitis; uretero-rectal stenosis.* Tuffier endeavored to implant the ureters into the rectum in two dogs. Under the strictest antiseptic precautions the abdomen was opened and 2 cm. of the inferior third of the ureter was isolated, care being taken to preserve the fatty and peritoneal coverings. An elastic ligature was applied about the ureter to prevent the escape of urine. Two strands of fine catgut were passed 1 cm. above the severed end. The intestine was opened by a small incision and the ureter carried into the bowel cavity 1 cm., where it was left freely hanging. The ureter was then carefully sutured to the intestinal wall and the incision closed with a Lembert suture. The animal lived but three days. The autopsy showed an intestinal fistula at the level of the suture and a general peritonitis. The ureter was partially stenosed at the rectal opening, and was already filled with a purulent fluid. The same experiment in another dog resulted in death on the fifth day, and the ureter was again found filled with pus.

TIZZONI AND POZZI,[22] 1888. *Two dogs, one recovery; both ureters implanted into loop of isolated bowel, and latter sutured to neck of bladder.* These experimenters isolated a piece of the small intestine, 7 cm. long, and united its ends, as well as the ends of the remaining bowel tract. A month later the ureters were implanted into this isolated portion of the intestine and the loop sutured to the neck of the bladder. At first the animal was incontinent, but after a while continence was established. The post-mortem two years after the operation showed the isolated loop of bowel empty and a new bladder formed from the neck of the bladder. An attempt to do the operation in one stage was a failure, the dog dying eight days after the operation.

These experiments have been included here, although, strictly speaking, the ureters were not implanted into the intestinal tract. The survival of the animal for such a long period of time shows what would result could the septic nature of the cavity into which the ureters are implanted be dispensed with.

PAOLI AND BUSACHI,[17] 1888. *Four dogs, one recovery; both ureters implanted; stenosis; pyelonephritis.* In four experiments made on dogs the ureters were sutured into the intestine. In nearly every case a constriction developed at the point of exit of the ureter. Two of the dogs died—one of a pyelonephritis, the other of infiltration of the urine; the third presented a dilatation of the intestine with anemia of the corresponding kidney. The fourth animal made a good recovery.

REED,[19] 1892. *Nine dogs; three recoveries; pyelonephritis; hydronephrosis; one kidney normal.* Reed succeeded in implanting one ureter in the rectum in three dogs, but six animals in which a bilateral implantation was attempted died. In the three dogs that survived the ureter was passed through a small slit in the rectum six inches above the anus and held in place by sutures passed through the sero-muscular edges of the bowel and the peritoneum, which had been dissected away with the ureter. The first dog lived ten weeks, but the specimen was lost. The kidney of the second dog was congested and showed evidences of acute nephritis and hydronephrosis. There was a perfect union of ureter and rectum. The third dog was killed twenty-five days after the operation. The left kidney was normal and there was no renal congestion or hydronephrosis. The uretero-rectal opening was patent.

In the six bilateral uretero-rectal anastomoses the ureters were inserted into the bowel three-quarters of an inch. The remainder of the operation was as described above. All the animals died in a few days of peritonitis or nephritis. Post-mortems showed in most instances hydronephrosis. From these experiments Reed concludes that the implantation of one ureter into the rectum is a possible and practical procedure, but that the simultaneous implantation of both ureters is still a questionable surgical procedure.

RÓSCISZEWSKI,[20] 1892. *Six dogs; one recovery; autopsy after three months; ureter thickened; hydronephrosis.* Rósciszewski implanted a single ureter into the rectum in six dogs, of which five died in three to five days of peritonitis due to giving way of the sutures. One dog survived three months. Death resulted from peritonitis following implantation of the other ureter. The post-mortem showed that the uretero-rectal union in the first operation was complete, and that a probe could be passed into the ureteral orifice quite easily. The rectal mucosa was normal. The ureter itself was thickened, and the pelvis of the kidney, which contained a purulent fluid, was considerably dilated. The kidney substance showed evidences of the interstitial changes. Rósciszewski ascribes the failure of the operation to imperfect technique.

(To be continued.)

Doses in German Pharmacopeia.—In the new edition of the Pharmacopeia Germanica patent-protected names are avoided as much as possible and the scientific term used. Salol, for instance, is recorded as phenyl salicylate, etc. The new names introduced in this class are: dermatol as basic bismuth gallate. trional as methyl sulphonal and salipyrin as phenyldimethyl-pyrazolon salicylate. The *Berliner klin. Woch.* quotes some of the new maximal doses with an exclamation point after each. Among them are bromoform, .5 to 1.5; hydrargyrum salicylicum, .02; the single dose of creosote has been changed from .2 to .5. The daily dose of tincture of strychnin is given as 1 to 2; of folia digitalis .2 to 1, and of the tincture, 1.5 to 5.

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HEREDITY AS A FACTOR IN THE ETIOLOGY OF PULMONARY TUBERCULOSIS.

Conflicting opinions have at different times existed as to the importance of heredity in the etiology of pulmonary tuberculosis. It is, however, scarcely maintained any longer that the disease itself is so transmitted, but rather that it is some vice of tissue—and therefore some aberration of function—that is thus conveyed from parent to child. Rarely tuberculosis is congenital, but even then the disease is not inherited, but merely acquired by the fetus *in utero* from the mother through the placenta. There can be no tuberculosis without tubercle bacilli, and these bacilli can not be inherited, although the susceptibility to their invasion can be and is. Some interesting data bearing on this subject are presented in a lecture delivered recently by Thomas Oliver.[1] From the statistics of the Mutual Life Insurance Company, of New York, it appears that a family history of tuberculosis indicates a liability to the disease on the part of an applicant for life insurance, and that the amount of this increased liability may be estimated at 30 per cent. This liability is naturally the greater when there is a history of two or more tuberculous persons in a family, and also when the disease occurs in a parent than when it occurs in a brother or sister.

By some it is believed that, of the parents, the mother is more likely than the father to transmit the liability if she herself or her family be tuberculous. The statistics of the Mutual Life Insurance Company, however, indicate the reverse, showing that the percentage of liability to pulmonary tuberculosis between 20 and 29 years is 43.3, when the father, and 36.5 when the mother has died from that disease; between 30 and 39 years the figures are 16.1 and 17.1 respectively; between 40 and 49 years, 10.4 and 7.5 respectively; and above 50 years, 9.6 and 4.6 respectively. In the experience of the Scottish Widows Fund, however, undoubted pulmonary tuberculosis is more frequently transmitted by the mother than by the father, the ratio being 6.29 on the side of the latter, as against 8.97 per cent. on the part of the former.

Tuberculous patients are below the normal in weight. It is an accepted fact that the highest mortality-percentage from tuberculosis and the highest proportion of underweights are encountered before middle age, and the lowest mortality-percentage and the highest proportion of overweights after middle age. In persons with no history of pulmonary tuberculosis in the family twice as many deaths occur among those below as among those above the average weight, while in families with such a history the percentage is greater—a circumstance that indicates that poor physique and enfeebled nutrition play some part in the etiology of the disease. In the experience of the Scottish Widows Fund, 80 per cent. of sufferers from pulmonary tuberculosis fall short of the average weight for height. Light weight and especially losing weight are precursors of pulmonary tuberculosis. Robust bodily development, on the other hand, while not without a favorable influence, does not prevent pulmonary tuberculosis, for the strongest athlete with a splendid physical frame, if a member of a tuberculous family, may succumb to the inherited disease. Neither does robust physical development, even in the absence of a tuberculous family history, insure against the danger of the disease. All are liable, but unequally so.

A study of all the cases admitted into Brompton Hospital for Consumptives, from 1855 to 1880, shows that when there is a family history of pulmonary tuberculosis, the members of that family who become tuberculous do so at an earlier age than do those of a family free from the disease who acquire it; also that when there is a history of tuberculosis in both parents, there is not only greater liability to the disease, but it develops at a still earlier age than when there is but a single inheritance. Among 3000 cases, 38 per cent. occurred in males and 58 per cent. in females who gave a family history of pulmonary tuberculosis. In 80 cases of well-marked family tuberculosis there was a history of paternal inheritance in 24, of maternal inheritance in 30, of double heredity in 24, and of atavism in 12. In these 80 families 385 children were born, 203 males and 182 females. In these tuberculosis appeared in 98 males and 96 females; and there died from this disease in childhood, 21 males and 16 females, while 84 males and 70 females remained apparently healthy. From these figures the conclusion is reached that the effect of paternal inheritance on males is to cause pulmonary tuberculosis to appear at an earlier age than in the parent and to reduce the constitutional resistance of the individual to the disease, while in females also it causes an earlier manifestation of the disease, but if anything, increases their resistance to it. The influence of tuberculous mothers, on the other hand, on their male offspring, is to increase the tendency to rather copious bleedings from the lungs, a circumstance that is not noticeable in females.

THE ETIOLOGY OF YELLOW FEVER.

The belief is growing that insects are important, even essential factors in the etiology of certain diseases. That malaria is inseparably connected with a mosquito that acts as an intermediate agent in the dissemination of the disease, has been proved definitely by suitable experiments, and the mosquito theory of malaria is in accord with the epidemiologic facts of the disease. Certain observations in the American typhoid camps of the Spanish-American War have brought the fly to the fore as a probable and dangerous carrier of typhoid fever. For some time past great interest has been taken in the etiology of yellow fever, and since the recent studies of Reed, Carroll and Agramonte on the rôle of the mosquito in this disease,[1] additional data have been awaited with much eagerness. Important additional evidence of the etiologic importance of mosquitoes—Culex fasciatus, Fabr.—in yellow fever is given in the paper presented by these investigators at the recent Pan-American Medical Congress in Havana, and published in this issue of THE JOURNAL. A few comments on this important paper may be ventured. At first thought one might be tempted to characterize the experiments carried out on the human beings as unwarrantable, but as we are assured that everything was done with the full consent and full knowledge of the nature of the experiments on the part of the non-immunes who placed themselves at the disposal of the experimenters, there can be no adequate reason for complaint on this score. Whatever the opinion concerning this phase of the experiments, it in no way modifies the scientific value of the results. The non-immunes that allowed themselves to be bitten by mosquitoes that previously had sucked the blood of yellow fever patients, as well as the persons who slept in the "Infected Clothing and Bedding Building," seem to have submitted themselves unreservedly to the requirements of the experiments. There are examples here of unselfish devotion to the cause of humanity and of science.

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[1] Lancet, Nov. 10, 1900, p. 1335.

The results of the experiments support the mosquito theory of yellow fever. The data are as yet rather scanty for the establishment of absolute conclusions with regard to all phases of the etiology of this disease, the specific cause of which is unknown. It seems well settled, however, that mosquitoes that have fed on the blood of yellow fever patients may transmit the disease to non-immunes. No one will doubt the far-reaching importance of this demonstration! Some evidence is also brought forward to show that exclusion of the intermediate host for the parasite of yellow fever renders the disease intransmissible. The results of experiments with infected clothing and bedding must be viewed in this light. The statement that "disinfection of articles of clothing, bedding, or merchandise, supposedly contaminated by contact with those sick with this disease—yellow fever—is unnecessary," seems to go a little further than the facts warrant; for it has not yet been shown that the intermediate host might not pick up, as it were, the parasite of the disease from these contaminated materials. In the future it is possible that the prevention of yellow fever may be reduced to the protection of both sick and well from the bites of Culex fasciatus, and to the destruction of this mosquito, should it be found to be the only intermediate host capable of transmission of the disease.

THE PATHOLOGY OF AKROMEGALY.

Lesions of the pituitary body have been found in so large a proportion of cases of akromegaly in which post-mortem examination has been made that, according to the prevailing view, the symptoms of the disease are to be attributed to such lesions, the pituitary body being believed to exercise some influence—of an inhibitory nature—on the growth and development of the skeleton, and the removal of which permits of hypertrophy of the bones. Some enlargement of the pituitary body has been observed also in cases of myxedema and cretinism; while, on the other hand, tumors of the pituitary body are sometimes unattended with symptoms of akromegaly and, as has been indicated, no change in the pituitary body has been noted in some cases of akromegaly, this body having been entirely wanting in at least one case. In many, further, the thyroid gland has been enlarged; and the thymus has been persistent in some. Enlargement of the spleen, hypertrophy of the breast, and changes in the pancreas and the ovaries—together with menstrual derangement—have also been occasionally observed. In view of the facts, therefore, the question can reasonably be asked whether the change in the pituitary body may not be merely one part of the morbid anatomy, in turn giving rise to certain symptoms peculiar to itself, and, together with the other changes due to some as yet undiscovered underlying common cause.

To the growing list of cases of akromegaly presenting lesions of the pituitary body, Mendel[1] adds another, in which this gland was the seat of a sarcoma. The patient was a woman, 29 years old, in whom characteristic symptoms had been present for six years. In addition to the typical changes in the skeleton—the hyperplasia of the supraorbital margins, the malar arches, the lower jaw, the hands and feet—there was temporal hemianopsia, with enlargement of the thyroid gland, abolition of the knee-jerks, and amenorrhea. Subsequently there developed also intense frontal and occipital headache, and severe and at times incoercible vomiting. Remissions occurred from time to time, but these were attended with polyphagia and polydipsia. The breasts were enlarged, notwithstanding the general emaciation. Treatment with a preparation of pituitary gland was without avail. Death occurred suddenly in an attack of pain. On post-mortem examination a tumor rather larger than a walnut was found at the base of the brain, in the region of the optic chiasm. The growth measured 6.5 cm. in its greatest width, and 3.5 cm. in its greatest thickness, and it was of soft, spongy consistence and grayish-red in color. On histologic examination, it proved to be a large, round-cell sarcoma, with connective-tissue septa in places, in part in process of myxomatous transformation. The tumor extended forward into the substance of the orbital temporal convolutions. On section, it was found that posteriorly it virtually occupied the third ventricle, extending symmetrically from below and the middle line into the greatly dilated lateral ventricles. The head of the caudate nucleus, a large part of the fibers of the knee of the corpus callosum, as well as both optic thalami, and the substance of the orbital temporal convolutions, were involved in the growth. The optic tracts were reduced to fine threads and were displaced by the tumor. The chiasm was represented by a thin band, resembling connective tissue. The sella turcica was excavated and enlarged in all directions. Its walls were thinned anteriorly as well as posteriorly, but the bone was not invaded by the new-growth. There was no trace of the normal structure of the pituitary body. The thyroid gland was greatly enlarged from the presence of colloid material; the thymus gland was persistent; the spleen was enlarged and softened; the right ovary was cystic; the mammary glands were excessively developed. Apart from uniform increase in size, the bones of the skeleton presented no abnormality; and the heart, lungs, liver and kidneys also were normal.

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[1] JOURNAL A. M. A., Nov. 3, 1900, p. 1156 and p. 1170.

[1] Berlin. klin. Woch., 1900, No. 46, p. 1031.

NEW FIELD FOR TRAINED NURSES.

From an editorial paragraph in a British contemporary[1] we learn that one of the latest fads over there is having trained nurses for pet dogs. We have heard of women nursing dogs before, but this is the first notice of that function of trained nurses. There is so much said nowadays of the high ideal, etc., of the nursing profession that it is something of a shock when this evidence comes to hand that, to some extent at least in Great Britain, it is literally "going to the dogs." So far as known this bestial fad has not appeared as yet in this country, though a combination of zoophile and anglomaniac possibly exists that may introduce it.

DIPLOMA-MILL GRADUATES IN MICHIGAN.

The Armstrong diploma-mill products located in Michigan are making a fight for their professional existence, and are unscrupulously using all means to that end. As an example of their zeal a circular explaining itself as "an appeal to the medical profession of the state" has been sent out seeking signers for a petition to the governor and legislature asking that the law be amended in their behalf. One argument used by them is that the present law will be declared unconstitutional by the U. S. Supreme Court. "Having a knowledge of all this," says their spokesman, "we do not think it wise or prudent to open up Michigan once more as a dumping ground for quacks." Whatever the judicial opinion may be on technical points of the law, the anxiety of these fellows whose medical qualifications were derived from the convicted fraud Armstrong and his quack manufactories to keep Michigan from being a "dumping ground" is sufficiently peculiar and conspicuous to be noteworthy.

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[1] Med. Press and Cir., Jan. 23.

EXPERIMENTAL TRANSPLANTATION OF INTESTINE INTO THE STOMACH.

Experimental operations on the gastro-intestinal tract have been long, a favorite field for the investigator. The contributions to experimental intestinal surgery by Senn have exercised a marked stimulus on the workers in this field. The purpose of these investigations is an exceedingly practical one, namely, to lay a sound foundation for the complicated and difficult surgical measures necessary to meet the numerous and varying indications presented in curative abdominal surgery. Recently Reerink[1] undertook to demonstrate whether large defects in the anterior wall of the stomach could be filled satisfactorily with implanted pieces of the intestine. For this purpose he excised a segment of the colon in dogs, reunited the divided ends of the colon, and sutured the piece of intestine, after laying it open, into a corresponding defect in the anterior wall of the stomach. After the first two or three mishaps he succeeded in securing firm fibrous union of the implanted intestine to the walls of the stomach. The final fate of the implanted piece has still to be determined by new experiments. Contingencies are easily imagined in which this procedure may be of advantage in human surgery—after excision of tumors and of ulcers of the stomach, for instance. In few fields is the ingenuity of the experimenter more quickly rewarded by increased facilities for expansion of surgical intervention than in experimental surgery of the abdomen.

MEMBRANOUS ANGINA DUE TO OTHER MICRO-ORGANISMS THAN DIPHTHERIA BACILLI.

It is by no means always safe to make a diagnosis of diphtheria from the presence of so-called false membrane in the throat or upon any other mucous or epithelial surface, as it is perfectly well known clinically, and has been demonstrated bacteriologically, that such a condition may be due also to the activity of other micro-organisms than diphtheria bacilli, and even without the intermediation of bacteria; for instance, as a result of the action of hot liquids or corrosive poisons or vapors. Thus, it has been shown that the angina of scarlet fever is not dependent on the activity of diphtheria bacilli, but is probably due to that of streptococci, and the oidium albicans is capable of giving rise to depositions of thrush that may cause some doubt in diagnosis. In addition to these, it is pointed out by Dr. W. G. Bissell[2] that the micrococcus of sputum-septicemia may cause the formation of a membranous deposit in the throat indistinguishable clinically from that of diphtheria. In the experience of the Bureau of Bacteriology of the Buffalo Department of Health there has been no fatal case of membranous angina due to the oidium albicans, although several cases of this character, due to streptococci and the micrococci of sputum-septicemia, have been observed. It is thought that these disorders, if at all communicable, are less so than diphtheria. These facts emphasize the necessity, already appreciated, of submitting to bacteriologic examination material from diseased throats, and governing the stringency of isolation in accordance with the identity of the microorganisms present.

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[1] Ziegler's Beitr., 1900, xxviii, 524-540.

[2] Buffalo Med. Jour., December, 1900, p. 312; Journal A. M. A., Dec. 15, 1900, p. 1584, 59.

MARRIAGE LEGISLATION.

In no less than three states at the present time enactments regulating marriage are before the legislatures, and apparently with some prospects of success. They are alike in their general provisions, prohibiting the union when one or the other of the candidates for matrimony is not physically sound, is subject to insanity, epilepsy, tuberculosis or other hereditary disease. In one state the proposed law apparently prohibits marriage if one or both the parties are members of a family tainted with these disorders, and in one there is an age limit established for women at 45 years, according to the newspaper reports of the bill. This probably is the same provision as is contained in a similar enactment in an eastern state in which marriage was permitted after the presumed reproductive period had been passed, and not a prohibition of marriage after that age. The difficulty with these and any similar laws is the impossibility of executing them; there may be a heavy penalty for the forbidden marriage in one state, but the ceremony can be legally performed a few miles away in another, and then the relations must be recognized as legal everywhere within the United States. So long as there is any part of the country where such laws do not prevail, they can be rendered ineffective. There is still another objection—if legal marriage is made difficult, illegal births become more frequent and illegitimacy may be added to degeneracy in a considerable portion of the population, a result certainly not to be desired. It would be an excellent thing could we prevent the propagation of diseased heredity. The sum of human happiness would be increased if fewer people were almost inevitably predestined from birth to suffering and disease, but the question is how far can we prevent it by law with our present social and political institutions. The experiment seems likely to be tried, possibly on an extensive scale, and the results will be of interest.

USE AND PRESCRIPTION OF ALCOHOL.

The Woman's Christian Temperance Union has issued a circular to physicians asking their aid "in the efforts being made to remove as far as possible all tendencies and temptations toward the formation of the drink habit." It particularly requests physicians to warn patients against the home prescription of alcohol and the use of proprietary medicines containing alcohol and other narcotic drugs. The circular would, however, be more effective with the medical profession generally did it not imply in other statements it contains, that alcohol has no value under any conditions as a medicine. There are, we know, physicians of acknowledged reputation who hold this view, but there is a much larger number, most of them, we believe, in full sympathy with the objects of the Woman's Christian Temperance Union, who maintain that it has its uses and that in certain morbid conditions nothing can well supply its place. These views are honestly held by, we believe, the great majority of the medical profession, and are perfectly compatible with the strictest temperance principles. A conscientious physician, holding that alcohol is a poison, but like many other poisons useful as a medicine under certain circumstances, would employ it as he would other poisons with all precautions against arousing appetite; he might even consider the dangers of alcohol to contraindicate its use in certain cases, notwithstanding its therapeutic value. The W. C. T. U. would have done better, we think, to have recognized the possible value of alcohol as a medicine, or at least the difference of opinion in regard to it, while not abating in any way the general condemnation of its indiscriminate prescription for ailments when it is not needed, and they would have then had the unqualified support of a vast majority of the medical profession.

SERUM TREATMENT OF MALIGNANT TUMORS.

Wlaeff immunized geese with blastomycetic organisms obtained from malignant tumors by Curtis, Plimmer and Sanfelice. He then subjected some 26 patients with carcinomas and other tumors to treatment with the serum of the immune geese.[1] The results are reported to show that the serum, which for some reason not stated is called anti-cellular. is quite harmless and free from danger; there forms a swelling at the seat of injection; the tumor itself swells up; later it diminishes in size, and eventually after repeated injections it may become encapsulated; regional lymphatic glands return to their normal size in case they are the seat of inflammatory enlargements, and those that are invaded by metastases diminish in volume. In favorable cases it is claimed that the serum may cause diminution in the size of the tumor and arrest of its evolution. Some abatement follows serum injections, also in advanced cases with ulceration and metastases. Among the general effects of the serum are noted: Some rise in temperature, shooting pains in the tumor, increase in strength and weight, return of sleep and appetite, marked leucocytosis, and occasionally an urticarial eruption. Seven to twelve cubic centimeters are injected subcutaneously in the thigh, the injections being repeated every 5 to 8 days. Wlaeff regards this treatment as the most valuable we now have. Whether a complete cure is obtainable by his method remains to be seen. At present he is working with asses, hoping to thus obtain a more efficacious serum. It is safe to say that this method as yet rests on a rather insufficient scientific basis. It is true that Curtis, Plimmer, and Sanfelice isolated blastomycetes from human tumors; and Wlaeff as well as Sanfelice claim they have produced true tumors in animals by injection of some of these organisms; but this claim has not been generally accepted, the common opinion being that the resulting growths are of inflammatory origin. In some of Wlaeff's experiments, however, epithelial proliferations with much similarity to adenoma are recorded, concerning the nature of which, whether inflammatory or truly neoplastic, there seems to be room for well-founded doubt. Wlaeff says that his serum cures infected animals, whereas the controls die from "tumors" and cachexia. It is also rather singular that serums produced by injections of different organisms from different kinds of tumors should have similar action on various tumors in human patients. The "anti-cellular" serum lacks the specificness, which is expected from analogy with other sorts of anti-serum. Naturally, the results here referred to must be confirmed by others before they may be accepted as at all decisive. They show, however, the direction in which the blastomycetic theory of malignant tumors is leading investigation.

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[1] Compt. Rend. de Soc. de Biol., 1900, iii, 1030-32.

CALIFORNIA'S PLAGUE LEGISLATION.

The Journal has already editorially noticed some extraordinary recommendations in the recent message of the Governor of California. These have since borne fruit in a bill offered in the state legislature which makes it a felony for any person "to publish by any writing or printing that Asiatic cholera or bubonic plague exists or has recently existed within the state unless the State Board of Health thereof has first determined such to be the fact and has entered a record of such determination upon the minutes of such board." This proposed law would therefore require a physician recognizing one of these diseases to suppress the fact until the State Board of Health chooses to investigate the matter and have the diagnosis regularly entered on its minutes, a procedure that would be eminently incompatible with the interests of the public as regards precautions against the spread of the disease. It is hard to understand how any rational legislator can fail to see this aspect of the case, and should the measure pass it can only be ascribed to a wave of acute imbecility involving the legislature. The bill as it stands is, as a California paper expresses it, "An act to make perjurers out of reputable physicians under penalty of being felons if they tell the truth." It is satisfactory to see that some newspapers in that state take a sensible course in regard to the matter, in spite of the apparent unreasoning craze that seems to have taken possession of the authorities. Unless the people of California come to their senses about the plague they may find themselves more seriously involved than they expect. The San Francisco Board of Health is undoubtedly doing what it can to check the spread of the plague, and so far with much apparent success, but there can be no assured confidence that it will be entirely stamped out as long as the state authorities adopt the ostrich policy of denying its existence, and the presumption exists that their action is in accordance. Such legislation as is proposed and the course of Governor Gage and the San Francisco press will do the state much more harm than good. What this country and other countries wish to know is that the California authorities are doing what they can to eradicate the pest. So far they have apparently done nothing but protest, and that altogether too much.

THE RELATION OF MALARIA TO THE GEOGRAPHIC DISTRIBUTION OF THE MALARIA-BEARING MOSQUITO.

Grassi asserts that the geographic distribution of the genus Anopheles, the mosquito of malaria, in Italy coincides with that of malaria. He thinks that a like coincidence will be found the world over. In the first number of the *Journal of Hygiene*, a new publication from Cambridge, England, founded for the purpose of the publishing in the English language of original work in hygiene, Nuttall, Cobbett and Strangeways-Pigg show quite clearly that Grassi's claim has no general application; for they have found Anopheles in many parts of England "where there is no record of malaria having previously existed, and where there is certainly no malaria to-day." Celli also has found Anopheles in healthy places in Italy in which there has never been malaria. The disappearance of malaria from Great Britain consequently does not depend upon the extinction of mosquitoes capable of harboring the parasites of malaria. The English investigators mentioned found Anopheles most numerously in low-lying land with stagnant water, in every way suitable for their habitat, and corresponding to former malarious districts. The disappearance of malaria is therefore attributed to several causes other than extinction of Anopheles, such as reduction of the numbers of this mosquito due to drainage of the land, reduction of the population by emigration, and possibly the use of quinin. Emigration would reduce the number of infected persons and thus lessen the source of infection of Anopheles, and the same result would follow the use of quinin, which checks the development of parasites in the blood. Probably drainage was the most efficient cause; at all events the older authors largely ascribed to it the disappearance of ague. As the geographic distribution of Anopheles is wider than that of malaria, it would seem as if an essential factor in the etiology of malaria is the number of Anopheles in any one place. The occurrence of Anopheles in non-malarious districts explains the occasional development of malaria in unexpected places without refuge to the assumption that malaria-bearing mosquitoes have been imported, as a malarious patient might well infect the local insects. Investigators studying malaria in various parts ought to follow the lines laid down in this report and search as carefully for Anopheles in non-malarious as in malarious regions. Only by such work is definite knowledge obtainable in regard to this phase of malaria and whether other blood-sucking insects may be the hosts of the malarial parasites.

THE DISSEMINATION OF THE TUBERCLE BACILLI FROM COWS IN COUGHING.

Inasmuch as the lungs are the most common seat of tuberculosis, and infection occurs through the dissemination of the discharges of the morbid lesions, the sputum constitutes the most frequent medium of communication. It has been shown that the milk of tuberculous animals may assume this rôle, even when the mammary gland and the nipples are not the seat of the disease; and occasionally infected flesh used as food, and imperfectly cooked, may act in a similar way. Human beings, however, are considered the worst offenders in this connection, by reason of the pernicious practice of promiscuous spitting, although it has been shown that tubercle bacilli may be contained in the fine particles ejected in the act of coughing. While the lower animals can not be charged with the offense of spitting, they do, however, cough; and it has, perhaps, not been sufficiently appreciated that in this way they may additionally aid in the spread of tuberculosis. That such a mode of dissemination is at least possible is demonstrated by some experimental observations made by Dr. M. R. Ravenel,[1] in the laboratory of the State Live-Stock Sanitary Board of Pennsylvania, which illustrate, besides, one of the beneficent objects to which intelligently administered boards of this character can devote themselves. By means of an ordinary nose-bag, near the bottom of which was arranged a shelf of sterilized soft pine wood, and kept in place for varying periods of time, the smallest particles ejected by tuberculous cows in the act of coughing were caught, then removed with a platinum needle to a cover-slip and examined microscopically. In this way it was possible to invariably demonstrate tubercle bacilli in the bronchial secretion from five tuberculous cows—twenty times in thirty-four examinations. In some instances, in which microscopic demonstration failed, inoculation experiments yielded positive results. As is pointed out, the danger to human beings from such atomized sputum is confined to those who come into contact with the animals, but it is much more constant and more pronounced for other animals in the same stable.

Medical News.

CALIFORNIA.

Dr. Luther M. Powers was re-elected health officer of Los Angeles, January 29.

Dr. Myrtle Aplin, East Highlands, formerly house physician at the Lane Hospital, San Francisco, has been appointed resident physician at the State Insane Asylum at Napa.

COLORADO.

New Medical Bill.—Dr. Benjamin F. Jefferson, Steamboat Springs, senator from Routt County, has introduced a bill into the senate which places the practice of medicine in the state entirely under the control of the State Board of Medical Examiners, which consists of five regulars, three homeopaths and one eclectic, to be named by the governor.

A Glenwood Springs physician set at defiance orders issued by the mayor to report to the municipal authorities all cases of contagious disease, and treated five cases of smallpox, reporting later to the secretary of the State Board of Health that he had the patients under supervision. The local board of health has instituted legal proceedings against him.

Prize Essay on the Dangers from Quackery.—The Colorado State Medical Society offers a prize of $25 for the best essay, deemed worthy of the prize, pointing out the dangers to public health and morals, especially to young persons, from quackery as promulgated by public advertisements. The competition is open to all. Essays must be type-written, in English, and submitted before May 15. Each essay must be designated by a motto, and accompanied by a sealed envelope, bearing the same motto, and enclosing the name and address of the author. The essay receiving the prize will become the property of the Society for publication. Others will be returned on application. Essays should be sent to the Literary Committee. room 315, McPhee Building, Denver, Colo.

ILLINOIS.

The Use of the Title "M.D.," or "Dr." by those who have not first obtained a license to practice medicine under the laws of the state is prohibited in a bill introduced by Representative Jones, of Cook County, February 6.

Medical Legislation.—If Senator Stubblefield's amendment which provides that nothing in the act shall be construed to apply to any person who ministers to or treats the sick or suffering by massage or by mental or spiritual means without the use of any drug or material remedy prevails, the new medical bill will be detrimental to all. The word "massage" will let down the bars to a great horde of quacks and charlatans who will work the gravest injury to public health and demoralize the medical profession. A committee has been appointed by the Illinois State Medical Society to combat the amendment, and is now conducting a most active campaign against the proposed measure. The co-operation of the sixty medical societies throughout the state has been invited and physicians all over the state are enlisted in the cause and are using all endeavor to defeat the bill.

Chicago.

Dr. William H. German will continue the work of the late Dr. Charles W. Purdy, of which he has been in charge for some months past.

Medical Students in parties of ten are being taken three times a week, by health department officials, to the Isolation Hospital to learn more of smallpox by actual observation of patients in that institution.

Wesley Hospital has received two donations of $5000 and $1000 from donors whose names are not to be announced until the dedicatory exercises of the new hospital, in May. The donations thus far received by the hospital amount to $101,000.

Hospitals benefit to the extent of $50,000 each by the generosity of the late Albert A. Munger. The institutions named are the Women's and Children's Hospital, the Chicago Foundlings' Home, the Chicago Nursery and Half-Orphan Asylum and the Home for Incurables.

A Hindu victim of the "International Medical College" has made an appeal to the world to prove his genuineness as a physician. He paid for his diploma, but his practice suffered when the president of the "college" was convicted of fraud. He supplements his appeal by testimonials, protests and other documents signed by high officials of India.

Health Conditions.—In every respect, except as to influenza, public health conditions continue to be satisfactory. The weekly bulletin of the health department announces that the threatening indications of the first three weeks of the year, during which the death-rate was 16.5 per 1000, as against 16.1 during the corresponding period of 1900, have subsided during the last three weeks, in which there were 125 fewer deaths than last year and a change in death-rates from 15.5 per 1000 in 1900 to 14.2 this year. Typhoid fever, diphtheria, scarlet fever, bronchitis and pneumonia death-rates are unusually low for the season of the year and remarkably so in the presence of influenza.

Scarcity of Ripe Vaccin.—Subsidence of the smallpox outbreak is especially fortunate in view of the scarcity of ripe vaccin. This scarcity has led producers to furnish lymph that has not been exposed to the action of the glycerin long enough to sterilize it properly. Such lymph produces very severe symptoms and the old-time "sore arms" of the vaccine "point." So serious had this become that school vaccination was suspended temporarily by the commissioner of health on February 8. It is expected to resume in a short time—as soon as the daily examinations in the laboratory show that the lymph is in proper condition. The emergency is not deemed grave enough to warrant the use of lymph which causes so much useless suffering and disability. Added severity of vaccination adds nothing to its protective power against smallpox; it is simply an evidence of impurity in the lymph—impurity which is removed by the action of the glycerin in from fifty to sixty days.

INDIANA.

Dr. Joseph L. Bell, Richmond, has been appointed assistant-surgeon in the army, and is ordered to report at Fort Crook, Neb.

An anonymous benefactor has added $10,000 to the $4000 already subscribed for the projected Union Hospital at Crawfordsville. This donation will assure the establishment of the hospital.

Hospital for Inebriates.—The committee on inebriety, of the State Board of Medical Registration, met at Indianapolis, February 1, and prepared a bill asking for an appropriation of $100,000 to found a state hospital for inebriates.

"Christian Science."—Senator Wood, of Lafayette, is making a fight in the legislature against "Christian Science." His bill makes it a felony for one having the care of a dependent person to withhold medical attention from such person on account of "Christian Science," death resulting from such withholding.

IOWA.

Smallpox is reported in more than forty localities in the state.

Dr. Benjamin W. Searle has been appointed pension examiner at Ottumwa.

Dr. Benjamin F. Campbell, Burlington, has been appointed physician of Des Moines County, vice Dr. Albert C. Zaiser, resigned.

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[1] Proceedings of Path. Soc. of Phila., N. S., iv, No. 2, p. 26.

The new coroner for Clinton County, to fill the position made vacant by the death of Dr. Charles Osborn, for the unexpired term, is Dr. Schuyler C. Hamilton, of Lyons.

Dr. Charles R. Russell, Ottumwa, has been reappointed physician of Wapello County, and Dr. E. A. Shaafe, also of Ottumwa, physician for three townships in the county.

Dr. Joseph A. Scroggs, Keokuk, has retired from the State Board of Health and the State Board of Medical Examiners, February 1, after serving for seven years, the latter part of the time as president.

MARYLAND.

Dr. William Osler, Baltimore, has given $1000 to the endowment fund of the library of the Maryland Medical and Chirurgical Faculty.

Dr. Lindsay Peters, formerly an assistant to Dr. Howard Kelly, has been made one of the resident staff of the insane department of Bayview Hospital, Baltimore.

Dr. William Whitridge, Baltimore, was elected president of the Maryland Society for the Prevention of Cruelty to Animals, at the twenty-eighth annual meeting, held January 19.

Dr. Thomas B. Owings, health officer of Howard County, recently discovered three cases of smallpox at Hanover Switch, near Elkridge. Many persons had been exposed and the cases had not been reported. A general outbreak is feared.

MICHIGAN.

An unlicensed Practitioner, of New Troy, has been arrested at the instance of the officers of the Berrien County Medical Society, for practicing in violation of the state law.

Dissection material in quantity sufficient to supply the needs of the students of the University of Michigan is difficult to secure, as the number of students has increased disproportionally with the number of unclaimed bodies of those who die in public institutions.

January Health of Michigan.—The report of the secretary of the State Board of Health shows that in the month of January, compared with the average in the ten years preceding, typhoid fever and smallpox were much more prevalent, and diarrhea, intermittent fever, erysipelas, remittent fever, measles, cerebrospinal meningitis and whooping-cough were less prevalent than usual.

New Medical Registration Board.—The governor appointed, on January 31, a new state board of medical registration, the appointments of the previous board having never been confirmed. As the board now stands, only four of the ten members hold over. It is composed of the following: Drs. Joseph B. Griswold, Grand Rapids; George E. Ranney, Lansing; Walter H. Sawyer, Hillsdale; Austin W. Alvord, Battle Creek; Henry B. Landon, Bay City, and five from other schools of medicine.

MINNESOTA.

Dr. David N. Jones, Gaylord, has been appointed a trustee for the state hospitals for the insane.

State Medical Examiners.—The governor has appointed Dr. Albert G. Stoddard, Fairfax; Dr. William Davis, St. Paul, and Dr. Albert F. Groves, Brainerd, members of the board.

Sanatarium for Consumptives.—A bill was introduced in the senate February 2 providing for a state sanitarium in the pine woods, for the treatment and cure of consumptives. It carries an appropriation of $150,000, with an annual appropriation of $50,000 for maintenance.

Osteopathic License.—A bill was introduced in the senate, February 2, providing that graduates of any legally incorporated school of osteopathy, may, on presentation of their diplomas and the payment of a fee of $2 to the secretary of state, secure a certificate authorizing them to practice osteopathy in the state. A penalty of from $50 to $100 is provided for practicing without such license, or obtaining one by fraud. Osteopathy is declared not to be the practice of medicine within the meaning of the state medical law.

MISSOURI.

Non-resident physicians are prohibited from practicing medicine in the state by proxy, by a bill passed by the state senate, February 5.

A State Hospital is proposed for the benefit of the sick poor of Missouri who now are sent to St. Louis for treatment, thus imposing a disproportionate burden on the municipal finances.

Under the new law Dr. James K. Graham, St. Joseph, has been appointed physician for the newly organized county board of health, and Dr. Carl Bitter, St. Charles, for that of St. Charles County.

The Smallpox Bill.—This, the first bill passed by the state legislature, provides for the creation of a county board of health in each county, which shall appoint a reputable physician. These county boards shall have the same powers and authority as are already given to the State Board of Health, within their respective limits, exclusive of incorporated cities and towns, regarding quarantine regulations and the prevention of the spread of communicable diseases therein.

NEW YORK.

Dr. Eugene J. Hanratta, Watervliet, has been reappointed city physician.

Dr. John C. Brown, Albany, has been appointed penitentiary physician, vice Dr. Charles H. Richardson, resigned.

A Smallpox Expert.—The State Board of Health has sent a smallpox expert to tour the state as an inspector, visiting the various places where smallpox has developed, and giving such advice to the local health authorities as may be needed.

Consumptive Hospital.—A bill has been introduced in the senate appropriating $100,000 to apply on the construction of the State Hospital for Incipient Consumptives. An appropriation was made some time ago, and if this bill passes, there will be enough money available to build a hospital with accommodations for 100 patients.

A Practitioner of Medicine.—According to an amendment to the Bell bill, approved by the state and New York City and County Medical associations a practitioner of medicine is one "who shall give treatment to any other person by the use of any remedy, agent, or method whatsoever, whether with or without the use of any medicine or instruments, or other appliances for the relief or cure of any wound or fracture, bodily injury or infirmity, physical or mental disease."

Buffalo.

Dr. Harry Mead has tendered his resignation as captain and assistant-surgeon of the Sixty-fifth regiment, N. G., N. Y.

Dr. Frederick W. Barrows, professor of histology and biology, at the University of Buffalo, was elected president of the New York State Association of Science Teachers at its recent meeting held at Rochester.

Dr. Eugene Wasdin, U. S. Marine-Hospital Service, now stationed at Buffalo, has been tendered by the Italian government the cross of officer of S. S. Maurizio et Lazzaro in recognition of his services in verifying and confirming the Italian studies and discoveries regarding the nature of yellow fever.

Charges Against Fitch Hospital.—Recently one of the daily papers made sensational charges against the superintendent and house physicians of the Fifth Accident Hospital. The hospital committee of the institution has found the charges without foundation, but the trustees of the Charity Organization Society of which the hospital was a branch, by resolution, welcome an inquiry by any responsible public authority, and charge and instruct all committees and employees of the society to give every facility for the full discovery of the facts and to render all assistance in their power.

New York City.

Home for Male Cancer Patients.—The Dominican sisters, who have in charge the recently established St. Rose's Free Home for Incurable Cancer Sufferers, have taken steps toward raising $40,000 to establish a similar home for such male patients.

Insanity Laws.—The New York Neurological Society and the State Charities Aid Association have each passed resolutions condemning any amendment to the state insanity laws, which would do away with the provision that the medical member of the commission shall have had five years' actual experience in the care and treatment of the insane.

Testimonial to Prof. Quinlan.—A complimentary dinner was tendered to Dr. Francis J. Quinlan, January 31, at which a loving-cup suitably inscribed was presented to him. Many distinguished members of the profession were present, and representatives from the various hospitals and medical schools. The dinner was given under the auspices of the New York Celtic Society.

Bellevue Hospital Abuses.—The report of the medical board to Commissioner Keller, shows that during 1900 24,300 patients were admitted to the hospital, 11,370 of which were ambulance cases. The five other principal hospitals of New York City cared for 2300 less patients than Bellevue Hospital alone. The report recommends that the insane be placed in charge of two well-qualified, salaried physicians who shall be held responsible for the condition of every one of their patients. Pupil nurses are not considered fitted for work in the insane pavilion. Special stress is laid on the absence of proper discipline and of a system whereby all nurses are held strictly and directly accountable to the superintendent of the hospital. The present system of poorly-paid and poorly-housed helpers is found to be a source not only of discomfort but of actual disease.

OHIO.

Dr. Harry H. Hatcher, Dayton, has succeeded Dr. John C. Reeve, Jr., as district surgeon of the Erie Railway.

Dr. John C. Larkin, Hillsboro, has been appointed local surgeon for the Baltimore and Ohio Southwestern Railroad.

Dr. and Mrs. Samuel W. Kelley, Cleveland, sailed January 31 on the *Augusta-Victoria* for a seventy-day cruise of the Mediterranean.

Dr. Caroline B. Culver, Sandusky, has been appointed a member of the medical staff of the State Hospital for the Insane at Massillon.

Lakeside Hospital, Cleveland, has received $10,000 from Mr. L. C. Hanna, to complete the erection and equipment of a ward for communicable diseases.

PENNSYLVANIA.

New Insane Hospital.—Representative Calder, of Harrisburg, on recommendation of the State Board of Charities, has introduced a bill in the house appropriating $500,000 for the construction of a new Pennsylvania state lunatic hospital in Harrisburg. It is hoped that if the appropriation is made the building now located there will be torn down and other buildings erected, 2 for convalescents, and 2 for destructive and dangerous patients. The sum of $350,000 will be required to erect these buildings, while the remainder of the amount is required for additional buildings.

Philadelphia.

A gift of $1000 has been given the Episcopal Hospital.

Medical Inspection.—During January, the medical inspectors acted on 457 cases of diphtheria, 329 of scarlet fever, 352 of typhoid fever, 210 of tuberculosis, and 1 case of smallpox.

Friction at Germantown Hospital.—Owing to friction between the board of managers and the staff of regular physicians of the Children's Hospital of Germantown, the latter have withdrawn as a body and left matters in the hands of the homeopaths, who are in full control of the institution.

"Knockout Drops."—So common has it become to report deaths due to "knockout" drops and other poisons that Coroner Dugan has been urging the enforcement of the laws regarding the sale of poisonous drugs, and of preventing their sale unless on physicians' prescription.

Antivaccination Bill.—A special meeting of the board of health was held February 11, to protest against the antivaccination bill recently introduced in the legislature. The immunity from smallpox in this city at this time has been attributed largely to the enforcement of the existing laws on this subject. Only a few cases have been discovered during the year, and these ordinarily occurred among negroes who had come in contact with others from infected districts of the South.

TENNESSEE.

Dr. J. S. Dye, Chattanooga, has returned after several months spent in study in Vienna.

Chattanooga is to have an ambulance and an isolation hospital, the latter being accessible only by a special pest-boat.

Dr. Howard K. Edgerton, Lebanon, sustained a fracture of both legs, February 1, by a tree falling across his buggy while he was driving.

The Nashville Board of Health reorganized January 28 and elected Dr. William G. Ewing, president. Dr. William Bailey is the new member.

Dr. Walter S. Nash, who sued the City of Knoxville for more than $1000 for services in the treatment of smallpox, has had his claim disallowed by Chancellor Shields.

The House of Representatives has again refused to give the State Board of Health power to control contagious diseases, where county and city officials fail in their duty. Efforts were made to exempt the cities, and otherwise make the bill acceptable over the opposition, but without avail.

UTAH.

Dr. Harry N. Mayo has been appointed to succeed Dr. Hyrum A. Anderson as physician of Salt Lake County.

Efficacy of Vaccination.—The Salt Lake Board of Health statistics show that from October 1 to December 31 there were 314 cases of smallpox in Salt Lake City, of which 291 were persons who had never been vaccinated. Of the remaining 23 cases 14 had not been vaccinated for more than twenty years.

Anti-vaccinationist Victory.—A bill introduced into the house of representatives, making it unlawful for any board of health or other board, having police powers or otherwise, to compel vaccination, or to make it precedent to the attendance of public or private schools recently passed by a vote of 37 to 6

The State Board of Medical Examiners, in the biennial report, states that during the two years ended Dec. 31, 1900, 42 persons were examined, 38 of whom received licenses to practice. The suggestion is made that the act of the legislature regulating the practice of medicine be so amended that the board can issue certificates from other recognized state boards of medical examiners, who would accept the state board's certificates in the spirit of reciprocity.

The medical men of Ogden have entered into a combination against irregular practitioners. At a joint meeting of the two medical societies, January 18, resolutions were passed stating that the members will sign no death certificates where the dead person was treated by a non-graduate or an irregular practitioner. No specific class is mentioned, but it is understood that the doctors intended the resolutions to apply to christian scientists, faith healers and similar practitioners.

VIRGINIA.

Protest Against License.—The physicians of the state have inaugurated a movement having for its object the abolition of the special license fee for physicians in the state. At present the physician pays a license fee to the city and another to the state, graded to the extent of his practice. In addition, he pays registration fees, income tax, etc.

Physician Indicted.—A practitioner, who, it is claimed, has never taken the state examination, although he has practiced in Newport News for several years, has been indicted by the grand jury for practicing as a physician and surgeon without securing a certificate from the State Board of Medical Examiners.

WISCONSIN.

Dr. John Madden, professor of physiology, Milwaukee Medical College, has resigned.

Dr. John Phillips has been appointed special physician in charge of smallpox patients in Stevens Point, at a salary of $15 a day.

Dr. William B. Lyman, superintendent of the State Hospital for the Insane, at Mendota, has resigned and will return to practice in Eau Claire.

Dr. Arthur L. Payne, Eau Claire, has been awarded damages of $5300 against parties who claimed that the plaintiff had been guilty of fraud and deception in his treatment and report of a case.

CANADA.

Leprosy in New Brunswick.—According to the annual report of the Minister of Agriculture of the Dominion Government, at the Lazaretto at Tracadie, N. B., there were 4 deaths during the year among the lepers, and 3 new admissions. At the present time there are 20 lepers in the institution, 13 males and 7 females.

Counter Prescribing.—This has been a much-talked-of subject among the druggists of Toronto during the past week or two. Over a dozen have recently been in the police court, at the instance of the detective of the Ontario Medical Council, and those of them whose cases have been heard have been fined $25 and costs or thirty days in jail without hard labor. This has been due to violations of the medical act, and is commonly called "counter prescribing."

Amalgamation of Medical Colleges.—The subcommittee for arranging a plan for amalgamation between Trinity and Toronto Medical Schools has placed its report in the hands of the general committee. It represents the labors of the subcommittee for the past twelve months. Dr. Irving Cameron was chairman of the sub-committee for Toronto while Dr. Charles Sheard acted in a similar capacity for Trinity. This report will now be sent on to the faculties of the two bodies concerned, when, after being confidentially considered by them, it will become the property of the public.

Ontario's Health.—The Ontario Provincial Board of Health held its quarterly meeting in Toronto last week, under the presidency of Dr. E. H. Vaux, of Hamilton. In his annual address, the chairman referred to the outbreaks of smallpox in several American states, and in other places in Canada. In Ontario, smallpox has broken out during the past year in twenty districts, but the department, through prompt measures of Dr. Bryce, has succeeded in completely stamping it out in each district. Regarding diphtheria, this had shown a falling off during the year, with the single exception of Toronto, where the disease had been very prevalent for some time past, and where the deaths from it alone reached 149 during the past year. This number was remarkable, when it was known that the total death-rate from diphtheria in Ontario was 486. In the month of January there were 21 deaths from it in Toronto. Tuberculosis caused an increase in the death-rate during the year. An important item dealt with by the board was that in reference to consumptives traveling in Pullman cars, and their proper disinfection thereafter. In this connection, the board will seek to co-operate with the railway companies.

FOREIGN.

The French minister of war has ordered that lectures be delivered at army posts on the dangers of drunkenness.

In Budapesth compulsory disinfection of the residence after the death of a tuberculous person is now enforced under penalty.

Dr. G. Holzknecht has been appointed Roentgen-ray expert in Vienna, the courts having created that office on account of the frequency of legal proceedings in which the rays play a part.

Physicians' Tour.—The Paris *Presse Médicale* has organized a "tour of the universities" for a party of forty physicians, to leave May 1. The route includes Lille, Liége, Cologne, Bonn, Heidelberg, Strasburg and Paris.

Serumtherapy.—Three medico-surgical societies of Paris have arranged for a joint meeting March 7, to discuss the question of serums in therapeutics. An address on the subject is to be distributed to all the members ten days before. Similar sessions are to be held from time to time.

Supervision of Medical Journals.—A bureau of medical literature has been organized by the German minister of public instruction as a supplementary measure to his recent decree prohibiting therapeutic or other experiments similar to those for which Neisser was condemned. A complete oversight of all the medical periodicals in the country is the task of the bureau. Our German exchanges have not mentioned this innovation, but it is described in a dispatch to the Paris *Semaine Méd.*, January 30.

Tetanus from Antidiphtheria Serum.—Dispatches to the *Semaine Méd.*, dated January 19, in regard to the cases of tetanus that followed the injection of antidiphtheria serum from the Milan Institute, noted in last week's JOURNAL (p. 391), state that the deaths now number twenty. A portion of the institute building was being demolished at the time the serum was prepared, and contamination may have occurred in this way. The officials of the institute have decided that henceforth the departments in which the various serums are prepared must be entirely separate and remote from each other, and the vials are also fused instead of corked as heretofore. The *British Med. Jour.*, February 2, states that four cases of tetanus following injections of hemostatic gelatin in typhoid fever have also recently occurred in the large hospital at Rome. It was found that the gelatin was prepared in a private pharmacy. An order has since been issued by the board of health that only gelatin prepared in laboratories of recognized scientific standing is to be used.

Vaccination Difficulties in Yucatan.—The surgeon-general of the Marine-Hospital Service has received an interesting report from the United States consul at Progresso, Yucatan, regarding the smallpox in that city and vicinity, and the difficulties encountered in enforcing vaccination. He states that a portion of the population consists of half-breeds known as Mestizoes and full-blooded Maya Indians. Regarding the opposition to vaccination, he writes as follows: "In their old pagan religion the great god 'Kak' was the god of fire and of smallpox, and as God-given the disease was not only to be received without question but to a certain extent courted. Young children were sometimes actually carried to the sick one's bedside to receive the divine fire. This old belief, while not now expressed in words still holds place in their inherent superstition, hence their indifference to the vaccination and the cases of smallpox that, despite all efforts, they will conceal amid the huts. Only when death occurs and the secret can not be hid is the case made public. Fines and remonstrances are in vain with such people. They pay the one and listen to the other with equal impassivity. Compulsory isolation in a public pest-house was tried, but this seemed to turn the passive into open menacing resistance and it was deemed best to modify the decree."

LONDON.

Report of the South African Hospitals Commission.

The report of the commission appointed to investigate the condition of the South African military hospitals, after the publication of Mr. Burdett-Coutts' serious charges, has been issued. The forecast already ventured in THE JOURNAL, that the army medical corps had well performed their duties, but that the red tape of a more or less obsolete war office was at fault, has been verified. It may be remembered that the commission first met in London on July 23 and held six sittings in London, and one at the great hospital and army school of Netley. They then sailed for Cape Town and proceeded up the country, inspecting all the hospitals on the line of route of the troops and taking evidence. They visited Bloemfontein, Kroonstadt, Pretoria and Johannesburg. They then went into Natal and examined the hospitals on their way down to Durban. A difficulty was experienced in getting the evidence of private soldiers, because they were slow in making complaints, more from a feeling of loyalty to their cloth than from being punished by their superiors. But in the hospital they were no doubt deterred by fear of the consequences. Except in certain instances, the complaints against the administration of the army medical corps, against individual hospitals, and against individual officers were found to be somewhat exaggerated, and were based on an insufficient understanding of the peculiar difficulties of the campaign. But there were very serious defects in the medical organization, for which a number of thorough-going reforms are suggested. These reforms are in the main those advocated by Mr. Burdett-Coutts in his letters to the *Times* which produced such a profound sensation.

Inadequacy of the Medical Staff.—The general inadequacy of the medical staff for a war of such unexpected magnitude is insisted on, but this is only part of the inadequacy of the whole military system. The medical corps was insufficient in both staff and equipment, and means were not provided by which its staff could be enlarged or its deficiencies promptly made good. This was not the fault of the medical director general and his staff, because a considerable time before the outbreak they urged upon the military authorities the necessity of an increase of the corps, but for the most part without avail.

Obsolete Ambulance Wagons.—The ambulance wagons were almost universally condemned. They were very heavy, requiring a large number of mules, and were very jolty and uncomfortable. The type used appears not to have been materially changed or improved upon for many years. The commission recommended they should be supplanted by a better type.

Lack of Transport in the General Hospitals.—The fixed general hospitals were generally not furnished with their own transport for the purpose of conveying patients between railway and other stations and the hospital. The transport was ordinarily supplied by requisition on the army service corps. This occasionally led to delay in patients being conveyed to and from the hospital, especially when convoys with sick and wounded arrived unexpectedly at railway stations. The delay was unavoidable because the hospitals had not their own means of transport at hand.

General Efficiency of the Medical Corps, but Need of Reforms.—The report does not endorse the many sweeping charges which have been leveled at the medical corps, and declares that as a whole they deserve great praise for their devotion and capacity and regrets the large number who have died in the discharge of their duty. But it admits that a feeling against the corps exists and that there is need for improvement. Many military officers distrust the skill and professional experience of the army doctors as compared with civil doctors. To a great extent the commission believes that this mistrust is unfounded. That it is not wholly unfounded is explained by the difficulties under which these army doctors work. Even in peace the corps is undermanned and overworked. The majority of the doctors have not sufficient holidays or leave of absence and no adequate opportunities of studying or keeping abreast of recent advances in medicine and surgery. In consequence there is some difficulty in obtaining men of good professional standing to join the corps. Again, the practice of appointing men to important posts by mere seniority is too rigidly followed. The commission recommend that: 1, the staff be permanently enlarged; 2, inducements be offered to ensure a supply of men of good professional attainment; 3, the men who have joined be kept, as a body, acquainted with the general progress of professional subjects.

Deficiency of Staff and Equipment for the War.—At the outbreak of the war there were available staff and equipment only two army corps. An army corps is approximately composed of three infantry divisions of 10,000 men each, and 6000 corps troops—cavalry, artillery, engineers, etc. Even the two army corps which were first employed were staffed and equipped with difficulty. When they were supplied there remained only a reserve equipment sufficient for one general and two stationary hospitals. The explanation for so small a reserve was that improvements were so often made in various articles that it was undesirable to keep a large stock of what might prove useless. For the other corps the deficiency was made up by private hospitals, civil doctors and untrained orderlies. The field-hospitals were ten short of their proper number, which caused a great strain throughout the campaign. At the time of greatest pressure—March, 1900—the total forces amounted to 207,000 men, for whom 800 medical officers—including civil doctors—6000 hospital subordinates, and 800 nurses were employed.

The State of Affairs at Bloemfontein in May.—The condition of the hospitals at Bloemfontein was the *pièce de résistance* of Mr. Coutts' charges. The commission finds that when the army began to advance toward Kroonstadt the field-hospitals had to be cleared in order to accompany the troops and the patients had to be discharged into the general hospitals. As the advance continued the sick and wounded were sent back toward Bloemfontein, with the result that there was great overcrowding of the hospitals. There were deficiencies in bedsteads, mattresses, commodes, bedpans, feeding cups and hospital clothing and an insufficient staff. But this condition was almost impossible to remedy, owing to the congested state of the single line of rail on which the whole army had to rely for food. In certain cases typhoid patients, but not very ill ones, had to attend to themselves.

Skiagraphy in Diseases of the Chest.

At the Medical Society of London, Dr. H. Walsham and Dr. Clifford Beale read an important paper on this subject. In order to obtain a satisfactory shadow, either on the fluorescent screen or the sensitive plate, a powerful coil, capable of yielding a 12 to 14-inch spark, is necessary. The patient should lie prone over the sensitive plate, with the tube two to three feet above the couch, the anticathode in the tube being placed exactly vertical to the part to be examined. Stereoscopic views can be obtained by Mr. Mackenzie Davidson's apparatus. An exposure of two minutes is, as a rule, sufficient. It is always advisable to examine with the screen at the back as well as the front, and useful information can be obtained by diagonal observations. There is no danger of dermatitis when the rays are passed only for a few minutes at a time. Cases of dermatitis have been reported, but the exposures have been excessive—one-half hour to two hours. To interpret morbid shadows, normal ones must be studied. Skiagraphs were thrown upon the screen clearly showing the shadows of the heart, diaphragm and mediastinal tissues, and in addition faint streaks by the left side of the heart shadow, and both sides of the mediastinal shadow. These have been shown by Dr. Walsham's and Dr. Beale's observations to be due to the pericardium and visceral pleura. The shadow of the scapula, the anterior axillary fold and in some cases the shadow of the nipple are easily identified by moving the arms. The very earliest deposit of tubercle does not yield any appreciable shadow. Cases were quoted showing that tuberculous shadows can be detected before there are abnormal physical signs. Cavities are indicated by light areas in dense shadows. Fibroid changes only give a shadow after they attain a definite density and their shadows differ considerably from those of tubercle. Empyema is indicated by exceptional translucency. In early dry pleurisy only a faint shadow can be detected. Serous effusion causes a faint blurring of the rib shadows, but does not obliterate them. Purulent effusion gives very dark shadows. Abscesses and caseating nodules give dark shadows. By far the most important use of skiagraphy in chest disease is for the detection of aneurysms and morbid growths. It may give evidence far more precise and definite than that obtained by ordinary methods.

Uremic Convulsions Successfully Treated by Bleeding and Saline Transfusion.

At the Liverpool Medical Institution, Dr. R. T. Glynn recently related the case of a man, aged 31, who entered the hospital with acute nephritis, apparently of ten days' duration, and probably the result of alcoholism and a chill. The urine was scanty, of high specific gravity and very albuminous. The pulse was tense and the heart enlarged. Notwithstanding the administration of purgatives and diaphoretics, including the hypodermic injection of pilocarpin and the restriction of food to diluted milk, uremic symptoms developed four days after admission. One fit followed another, with coma, stertor, cyanosis and contracted pupils. The condition having lasted several hours, two pints of blood were removed and one of saline solution was injected into the connective tissue of the axilla and shortly afterward one-half pint into the rectum. The convulsions ceased and consciousness returned. He perspired freely for the first time and on the next day passed 46 ounces of urine, 20 ounces having been the maximum in the twenty-four hours previous. In the following ten days he passed on an average 70 ounces of urine in twenty-four hours. The albumin disappeared, the arterial tension decreased, the apex of the heart returned to its normal site, and he left the hospital in about a month, apparently quite well.

Correspondence.

Water in Typhoid Fever.

Saratoga Springs, N. Y., Jan. 29, 1901.

To the Editor:—In The Journal of January 24 there was an article by Dr. Anders, of Philadelphia, on the use of large quantities of water in typhoid fever, and I was particularly pleased that so eminent an individual as Dr. Anders endorsed the procedure in this manner and thought it worthy of attention at a meeting of the American Medical Association. In 1898 I read an article on the use of water in typhoid fever before our local society, emphasizing the great quantities required in some cases, the difficulties in teaching nurses to give the required amount, the very great influence it exercised over all the symptoms, that the patient's condition was not so critical with a very high temperature if plenty of water was given, that if a sufficient quantity were given tub-baths were not imperative, which in private practice will be appreciated by most of us, and lastly, that the guide to the quantity of water required in each individual case was the *tongue*—this member must be moist at all times regardless of the quantity consumed.

I sent this manuscript to a weekly medical journal for publication, and it was returned to me with the information—though I can not give the exact wording—that the article was too visionary. It was, however, promptly published by the *Albany Medical Annals*, and I am glad to have the commendation expressed by Dr. Anders' article for the thoughts expressed at that time.

I have been using quantities of water as suggested in my practice since 1895, with the greatest comfort to myself and benefit to my patient. In 1898 I had only treated nineteen consecutive patients without a death, now the number is something over fifty. Many of these have been most desperate cases, and we are sure that the use of water has been a factor in their recovery. Surely no one who has been in the habit of treating typhoid fever without quantities of water internally can realize what it means to see the patient going through such an illness with the high temperature, nervous manifestations, sordes, dry tongue, and, practically, all the complications mitigated or absent. I find that patients require much larger quantities of water than mentioned by Dr. Anders. He speaks of 5 or 6 quarts as being often required in twenty-four hours, but I find that it is often necessary to use very much more, and I frequently note that the patient has taken from 8 to 16 quarts in twenty-four hours. To one who has not used this quantity the administration would seem almost impossible. It requires determination on the part of the physician, with a consciousness that it is the proper treatment, to insist that the nurse does as directed, and this is the particular thing which seems very difficult for them to understand, appreciate or execute.

The guide to the amount of water required is a very important one, and is not mentioned by Dr. Anders, or others, so far as I know, at all; that is, that the tongue must be moist at all times. This will necessitate the patient's being disturbed at least every half hour, perhaps oftener, to be given from 4 to 8 ounces of water, but unless this is done no conclusions can be deduced concerning its value in these cases. Yours truly,

511 Broadway.

D. C. Moriarta, M.D.

The New Method of Inducing Sleep Without Drugs: One-Hundred-Dollar Prize.

NORTHAMPTON, MASS., Jan. 30, 1901.

To the Editor:—The one grand step in scientific medicine during the centuries has been that just accomplished at the close of the nineteenth. Tuberculosis is now to be cured by sunshine, open-air exercise and plain food. Drugs, predigested foods and the poisonous inhalations of the closed wards are recognized as causes rather than cures of tuberculosis.

A revolution of no less importance is in process to liberate the non-sleeping, hypnotic, drug-taking brain-workers now on duty in all the great centers of this country. Drug unconsciousness is causative, not curative, of insomnia. By well-trained will power we may command quiet in the workshop of the brain, as we may in the mill. It is all a matter of turning on and off the belts.

"The New Method of Inducing Sleep Without Drugs" consists in bringing under control two functions of organic life at the retiring hour. The organs of respiration and circulation respond at once to our bidding, and automatic brain activity is rendered impossible. To "stop thinking" is to begin sleeping. Normal sleep is reparative. Drug unconsciousness is destructive.

Believing the medical profession has power to turn the attention of suffering humanity from the chimerical and damaging drug agents they now resort to and depend on, and that it is our duty to shed light rather than darkness, I offer a prize of $100 for an essay describing any method that will equal or surpass the one above referred to.

Judges of the merits of essays offered will be representative men of scientific medicine. The time allotted for preparing the essay is the first half of the year 1901, the essay not to exceed four thousand words. Only type-written or printed matter will be examined. All names will be withheld until the award is given. J. B. LEARNED, M.D.

Married.

JAMES S. DAWSON, M.D., Perry, N.Y., to Miss Verdi Dennison, of Canisteo, January 30.

PETER E. HYRUP-PEDERSON, M.D., to Miss Marie Louise Alsop, both of Laramie, Wyo., January 24.

MOLLIE V. LEWIS, M.D., Madison, Ind., to Mr. John Sarran, of Indianapolis, at Vevay, Ind., January 30.

Deaths and Obituaries.

Abraham Bettman, M.D., an old resident of Cincinnati, Ohio, who settled there in 1846, and with the exception of three years spent in Chicago, lived afterward in that city, died after an illness of a week, from kidney disease, at his home in Cincinnati, January 14, at the age of 95. He studied medicine in the universities of Wurtzburg, Erlangen, Heidelberg and Munich, and graduated from the latter in 1842. He then took a post-graduate course in Vienna under Professor Skoda. He retired from active practice in 1880. In 1892 the University of Munich, in honor of the fiftieth anniversary of his graduation, sent him an honorary diploma.

William W. Lane, M.D., New York University, 1855, died at Wilmington, N. C., from cirrhosis of the liver, February 4, aged 69. After his graduation, Dr. Lane studied two years in Paris, and then settled in Vicksburg, Miss., and on the outbreak of the Civil War, served on the Confederate side. 1870 he moved to Wilmington and was put in charge of the U. S. Marine-Hospital in that city. In 1881 he was placed in charge of the City Hospital, a position which he filled until his death.

Benjamin Franklin, M.D., New York University, 1868, died at his home in Newark, N. J., from la grippe on February 6. During the Civil War he was a prisoner for seven months at Andersonville and he also served with the Cuban patriot army in the ten-years war. He was a member of THE AMERICAN MEDICAL ASSOCIATION.

Emery A. Merrifield, M.D., Albany Medical College, Albany, N. Y., 1853, of Macon, Mo., died at the Baptist Hospital, St. Louis, December 7, aged 74. He practiced in Herkimer county, New York, until 1860, when he went into the service as surgeon of the 58th Illinois Volunteers and served throughout the war.

Michael Royston Pigott, M.D., University of Virginia, Passed-Asst. Surgeon, U. S. Navy, died suddenly at the Naval Academy, Annapolis, Md., January 31, aged 35. He was a native of Massachusetts and instructor in physiology and hygiene at the Naval Academy.

Newton J. Wedgewood, M.D., Medical School of Maine, Brunswick, 1870, of Lewiston, Me., and a member of the Androscoggin, Maine Medical, and THE AMERICAN MEDICAL ASSOCIATIONS, died at his home in Lewiston, February 5, from Bright's disease, aged 54.

Walter Myers, M.D.—The Liverpool School of Tropical Medicine announces, with deep regret, the death, from yellow fever, of Dr. Walter Myers, one of the members of the yellow fever expedition of that school, who lost his life in the cause of humanity and science.

Henry F. Baxter, M.D., University of Pennsylvania, 1864, a member of the County Medical Society and of THE AMERICAN MEDICAL ASSOCIATION, died at his home in Philadelphia, February 1, after a prolonged illness, at the age of 57 years.

John M. Hundley, M.D., Jefferson Medical College, Philadelphia, 1849, at one time a prominent physician of Essex County, Va., died after an illness of three years from paralysis, at his home in Montague, January 30, aged 75.

Lincoln Johnson, M.D., Columbian University, Washington, D.C., 1894, died January 2 from yellow fever, at Bocas del Toro, Colombia, South America, where he had gone to engage in practice. He was 32 years old.

Clayton A. Cowgill, M.D., Pennsylvania Medical College, Philadelphia, 1846, who retired six years ago after nearly half a century of practice in Dover, Del., died at his residence in Philadelphia, February 2, aged 74.

Daniel W. Hazelton, M.D., Vermont Medical College, Woodstock, 1848, of Springfield, Vt., the oldest practicing physician in the locality, died in Bellows Falls, Vt., January 31, from pneumonia, aged 76.

David N. De Tar, M.D., University of Michigan, Ann Arbor, 1880, died January 31, at his home in Boone, Iowa, from cerebral hemorrhage, following an attack of cholelithiasis. He was 48 years of age.

William H. Scott, M.D., Meharry Medical College, Nashville, Tenn., 1886, a colored physician of Houston, Texas, died at his home in that city, February 1, after a prolonged illness.

Ira Doan, M.D., Medical College of Indiana, Indianapolis, 1880, of North Bend, Neb., a member of THE AMERICAN MEDICAL ASSOCIATION, died suddenly at Fremont, Neb., February 6.

Charles Osborn, M.D., Rush Medical College, Chicago, 1890, of Lyons, Iowa, coroner of Clinton County, died February 2 from apoplexy, at Mercy Hospital, Dubuque, Iowa, aged 35.

Jacob H. Putnam, M.D., Long Island College Hospital, Brooklyn, N. Y., 1867, of Rutland, Vt., died from pneumonia at the Buffalo General Hospital, January 28, aged 61.

Rosier Middleton, M.D., Columbian University, Washington, D. C., 1889, died from consumption after a long illness at the Columbian University Hospital, January 31.

Lewis Buffett, M.D., who went to Maryland from Cleveland, Ohio, in 1891, died at his home near Easton, Md., January 27, from carcinoma of the stomach.

Samuel H. Cade, M.D., Medical College of Alabama, Mobile, 1874, died at Negreet, La., where he had resided for the past twenty-five years, February 7.

Augustine Shurtleff, M.D., Harvard University Medical School, Boston, 1849, died at his home in Brookline, Mass., January 27, aged 74.

John E. Garner, M.D., College of Physicians and Surgeons, Baltimore, Md., 1876, died suddenly at his home near Union, S. C., February 3.

Wiley W. Bloodworth, M.D., Jefferson Medical College, Philadelphia, 1850, died at his home in Pratt City, Ala., January 28.

J. B. Darling, M.D., Starling Medical College, Columbus, Ohio, 1857, died at Austin, Ill., February 2.

James Harty Kennedy, M.D., McGill University, Montreal, died recently at Michipicoten, Ontario.

Henry C. Hill, M.D., University of Michigan, 1859, died at Lockport, N. Y., February 8, aged 60.

Samuel C. Busey, M.D., of Washington, D. C., died February 12. His obituary will appear next week.

Association News.

Chairmen of Committees of the American Medical Association.

Dr. J. F. Fulton, Lowry Arcade, St. Paul, Minn., on arrangements.

Dr. C. A. Wheaton, Lowry Arcade, St. Paul, Minn., on finance.

Dr. J. W. Chamberlin, Lowry Arcade, St. Paul, Minn., badges.

Dr. C. Williams, 145 West 5th street, St. Paul, Minn., banquets.

Dr. H. L. Taylor, Lowry Arcade, St. Paul, Minn., general exhibits.

Dr. H. H. Kimball, Dayton Building, St. Paul, Minn., meeting places.

Dr. Burnside Foster, Lowry Arcade, St. Paul, Minn., entertainments.

Dr. Edw. Boeckmann, Lowry Arcade, St. Paul, Minn., pathological exhibits.

Dr. J. A. Quinn, corner 4th street and Wabasha, St. Paul, Minn., transportation.

Dr. Harry O'Brien, Endicott Arcade, St. Paul, Minn., programs and publications.

Dr. J. T. Rogers, Lowry Arcade, St. Paul, Minn., halls and meeting places.

Dr. E. J. Abbott, Endicott Arcade, St. Paul, Minn., bureau of information.

Dr. J. B. Brimhall, Seven Corners, St. Paul, Minn., registration.

Dr. Arthur Sweeney, Lowry Arcade, St. Paul, Minn., hotel arrangements.

Book Notices.

MALARIA ACCORDING TO THE NEW RESEARCHES. By Prof. Angelo Celli, Director of the Institute of Hygiene, University of Rome. Translated from the Second Italian Edition, by John Joseph Eyre, M.R.C.P., L.R.C.S. Ire., D.P.H. Cambridge. With an Introduction by Dr. Patrick Manson, Medical Adviser to the Colonial Office. With Maps and Illustrations. Cloth. Pp. 275. Price $3.00. London, New York, and Bombay: Longmans, Green & Co. 1900.

"We owe to the Italians not only the name but also much of our knowledge of malaria." Thus Dr. Patrick Manson begins his *Introduction* to the work, and one of the most eminent of these Italian students of the epidemiology of paludism is Professor Celli. Dr. Manson further says: "I saw the peasants whose sordid lives he describes so graphically, and I saw in operation the economic system which, together with malaria, has reduced these wretched people to what is practically a position of slavery."

In the chapter on the history of malaria the author dwells upon the drainage system, the cloacæ and aqueducts of the early Romans, and shows how they had maintained a sanitary city, although surrounded by a deadly malarial zone. Many passages from the ancient Latin writers—Horace, Pliny, etc.—are quoted, and show the dread with which the surrounding Campagna was regarded at that time. Later, foreign invasions and civil strife destroyed the work already done and nullified the efforts of the popes to drain the Agro Romano, and thus reduced it to an uninhabited waste.

The scientific consideration of malaria is fully taken up by the author, and numerous illustrations render the text clear. The book affords instructive and interesting reading.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners. With 243 Original Illustrations including 12 Colored Figures. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, New York. Cloth. Pp. 406. Price, $2.00. New York: William Wood & Co. 1900.

This concise and useful little manual is intended for the student and general practitioner. The text is elucidated by numerous illustrations both of ocular diseases and the instruments in general use by the ophthalmologist. There are several colored plates of the normal and pathologic fundus. Errors of refraction are fully explained and the different methods of their recognition and correction made clear. We confidently recommend the work.

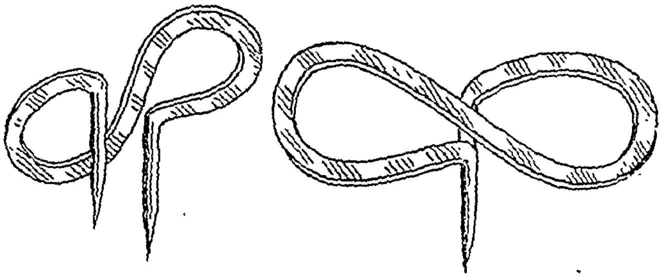
New Instruments.

New Bandage Pin.

GEORGE D. McLEAN.

NASHVILLE, TENN.

I present illustrations of a bandage-pin recently devised by me. The pin is made as follows: A figure-of-eight piece of wire having the two ends turned at right angles to the plane of base and the ends sharpened. The base is flattened and the two prongs extend one-half to five-eighths of an inch up from the base, perpendicular to it and parallel to each other. These two are about one-fourth of an inch apart. In applying a bandage, say a recurrent of the scalp, after making one turn around the head to fix the bandage place one pin on the inion and one just above the sinciput; this will enable the surgeon, by pressing the bandage down over the extending prongs, and returning over them, to apply this bandage alone and with a single-headed roller bandage. After enough has been put on, separate the prongs and turn down against the head, making, if desired, one turn around to hold them down and protect the points. This pin will work in any spica, figure of eight, or recurrent, as of a stump, absolutely preventing slipping at the point of application. The device is simple, and it is strange that it is not already in use; but I have been unable to find any one who has heard of one used by surgeons. The pin has been commended by many of the physicians of Nashville, and will, I think, meet the approval of all who have to use bandages.

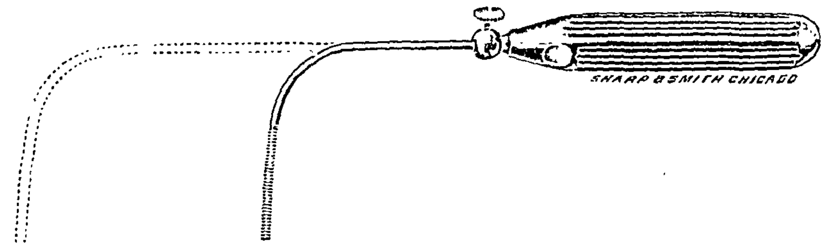


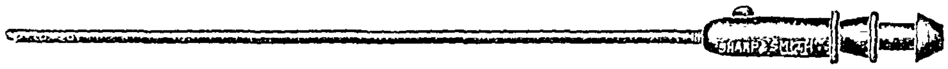
A Nasal Irrigator, Intratracheal Spray and Laryngeal Applicator.

OTTO T. FREER, M.D.

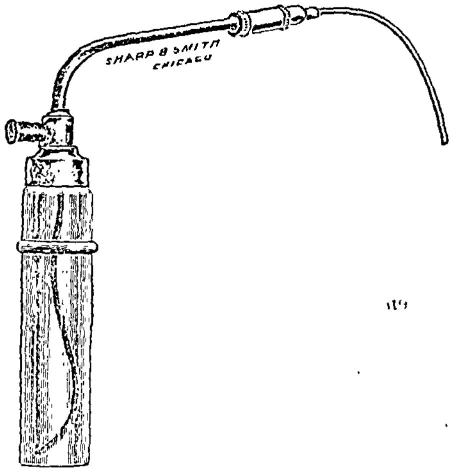
CHICAGO.

The instruments here described have grown out of the needs of practice and have all seen lengthy service in my hands. To avoid the danger of fluid penetrating the middle ear, incident to the use of the nasal douche or syringe, I have devised the little irrigating tube shown in the cut. It is made of hard rubber, hence has some elasticity, and is perforated near its end by three minute holes, 1/64 inch in diameter. The tube is connected to a fountain syringe by the usual coupling for Eustachian catheters, and emits three tiny but forcible jets that are not large enough to flood the nose or nasopharynx, but undermine and wash adherent pus or crusts from these regions. I give the tube to the patient to use at home, and during many years of its employment have never had any complaint of ear symptoms, while the patients, even in marked cases of ozena, keep the nose and nasopharynx clean. In aggravated cases I aid the use of the tube by means of oily applications to soften the crusts. The advantage of the instrument over the postnasal syringe is that during the use of the latter the patient is apt to raise the soft palate and so diminish or entirely obliterate the postnasal space, thus preventing irrigating fluids from reaching the parts to be cleansed. By rotation of the tube the streams can be made to reach any part of the nasal fossæ from the roof to the floor. More than three holes were found to unduly diminish the force of the streams and to emit too great an amount of fluid. Metal tubes are too stiff and cause pain.





The second instrument shown is a spray tube that I have designed for intratracheal applications in chronic tracheitis, especially the dry form with crusts. The appliance screws on to the regular Davidson atomizer with nasal tip, and its end can be easily passed between the vocal cords, by aid of the mirror. In sensitive larynges local anesthesia of slight degree is needed. The instrument emits a coarse spray within the trachea. It has been suggested that a laryngeal syringe passed into the trachea would do equal service. The advantages of a spray are that minute amounts of concentrated solutions can be evenly applied to a large surface while the irritation caused by the necessarily large amounts of fluids of the same strength used in a syringe would be intolerable. Even in large quantity the fluid so injected would not apply itself as uniformly as if sprayed. For certain cases the tubes need to be of extra length to reach far enough down to enter the trachea.



The third instrument is a strong laryngeal applicator with a heavy handle through which the shank of the applicator passes so that it can be adjusted in length. The end of the instrument is fitted with a screw thread. It is quite impossible for cotton swabs wound on this to become detached. I devised the instrument as I found that the ordinary light laryngeal applicators with small handles were apt to rotate in the hand if the extremity touched any part of the pharynx or the epiglottis. The weight and firmness of the instrument fits it especially for vigorous applications of lactic acid to the tubercular larynx, or for massage of thickened laryngeal mucous membrane.

288 E. Huron Street.

Miscellany.

The Duration of Life.—The question is often raised whether the great advances in the arts and sciences have, after all, contributed to the prolongation of life. Such evidence as is accessible would seem to point in the affirmative. Thus, in England and Wales, during the period of 1841 to 1850, the death-rate among males of all ages was 23.1 and among females 21.6 per 1000, while during the years from 1886 to 1889, the death-rate was 20 per 1000 for males and 17.8 for females. It therefore appears that within fifty years there has been a clear gain of more than three lives in every thousand. The birth-rate in England has, however, declined during the corresponding period, having been, in 1842, 32.6 per million of population, while from 1886 to 1890 it was 31.4.

The Postural Treatment of Bronchial Affections.—The physician often has reason to doubt the efficacy of his treatment of bronchial affections, particularly when these have become chronic, and some suggestions made by Jacobson (*Berliner Klin. Woch.*, 1900, No. 41, p. 904) in a recent communication, may prove of practical utility in this connection. It is pointed out that the first indication in the treatment of all bronchitic disorders consists in removal of the morbid bronchial secretion. This is especially attended with difficulty in the presence of chronic processes, when the sensitiveness of the mucous membrane to irritation is diminished. Under such circumstances it is customary to replace the physiologic irritation resulting from the contact of the secretion with normal mucous membrane by chemical irritants—so-called expectorants. The resulting effect is general and not local, and stimulates increased production of secretion. Bronchiectatic processes, however, do not yield to such treatment; nor is the outlook for surgical intervention hopeful, inasmuch as the lesions are often multiple and bilateral. Quincke has proposed the removal of the accumulated secretion by gravitation, placing the patient in a prone position, with the head below the level of the body. In its gradual escape the secretion reaches healthy mucous membrane, which it irritates. It thus excites cough and expulsion, while at the same time air enters previously airless portions of lungs, respiration assumes more the costal type and the pressure of the abdominal organs upward on the diaphragm facilitates expiration. Besides, the expectoration can be regulated, so that it shall take place at stated intervals and not be continued throughout the day. Further, extension of the morbid process and the development by aspiration of bronchopneumonia and putrid decomposition are by this means prevented. The procedure is also applicable in the presence of fetid bronchitis. It is contraindicated when acute conditions or a single large abscess exists. Cylindrical bronchiectases are more favorably influenced than saccular. Pulmonary abscess and empyema are not well suited to this means of treatment. The patients are placed in the desired position for an hour morning and evening.

Therapeutics.

Renal Colic.

The following outline of treatment is given by Gould: For the acute attack hypodermic injections of morphin, gr. 1/4 combined with atropin, gr. 1/120 and repeated in two hours if necessary. Hot flannel cloths, stupes or poultices should be applied over the affected area. In recurrent attacks attention to elimination by the bowels, skin and kidneys should receive the proper notice. Rochelle salts ʒiv, Epsom salts ʒiv, or Carlsbad ʒi-ii for the bowels, and one of the following prescriptions to promote diuresis and render the urine alkaline:

R.	Lithii citratis	ʒi	4	
	Ext. hydrangeæ flu.	ʒiv	16	
	Infusi tritici q. s. ad	℥vi	192	

M. Sig.: One tablespoonful every four hours in water.

Hydrangea is an unofficial preparation, but is classified by Potter as of special importance in treatment of renal calculus by relieving the pain during the passage of renal concretions through the ureters or in promoting the removal of gravel from the bladder: or

R.	Lithii citratis	ʒi	4	
	Pot. citratis	ʒiss	6	
	Ext. zeæ fluidi	℥i	32	
	Infusi uvæ ursi q. s. ad	℥vi	192	

M. Sig.: One tablespoonful every four hours.

As a Laxative for Children.

R.	Mannæ	℥ss	16	
	Magnesiæ—calcined			
	Sulphuris loti, āā	℥iss	48	
	Mellis despumati q. s. ad	℥iv	128	

M. Sig.: A tablespoonful to be taken in a cup of hot milk. The dose can be increased if necessary.

Follicular Tonsillitis.

℞.	Creosòti	m. x		65
	Tinct. myrrhæ			
	Glycerini, āā	℥i	32	
	Aquæ q. s. ad	℥iv	128	

M. Sig.: Use as a gargle or spray four or five times daily.

ACUTE FOLLICULAR TONSILLITIS.

Dr. D. R. Brower has always derived splendid results from the use of the following combination, having first administered a mercurial or saline purgative:

R.	Potassii chloratis	ʒss	2	
	Acidi hydrochlor. dil	ʒii	8	
	Tinct. ferri chloridi	ʒiii	12	
	Glycerini	℥i	32	
	Syr. tolutani q. s. ad	℥iii	96	

M. Sig.: One teaspoonful in water every two hours.

ABORTMENT OF FOLLICULAR TONSILLITIS.

The *Medical Council* states that follicular tonsillitis, if seen early, may be checked by swabbing the throat with the following:

℞.	Potassii chloratis	gr. xxx	2	
	Tinct. ferri chloridi			
	Glycerini, āā	ʒiiss	10	
	Aq. destil. q. s. ad	℥i	32	

M. Sig.: Swab the throat every two hours with this solution, alternating with a solution of peroxid of hydrogen, to be used in the same way.

After swabbing, a tablet of hydrargyri chloridum mite and sodium bicarbonate is to be dissolved in the mouth after each swabbing.

For the headache, soreness and other disturbances the following is recommended internally:

R.	Acetanilidi	gr. xxxv	2	33
	Camphoræ monobromatæ	gr. viii		5
	Sodii salicylatis	gr. xv	1	
	Extracti hyoscyami	gr. ii		12

M. Ft. capsulæ No. xv. Sig.: One capsule every hour until relieved or until five have been taken.

For children the same treatment is recommended, except the mercurial tablets are stopped as soon as the bowels have moved freely and the last-mentioned capsules are proportionately reduced to the age of the child.

To Remove Tattoo Marks.

The "Clyclopedia of Med. Surgery" describes the method of Variot as follows: The skin is first covered with a concentrated solution of tannin, and retattooed with this in the parts to be cleared. Then an ordinary nitrate of silver crayon is rubbed over these parts, which become black by formation of tannate of silver in the superficial layer of the derma. Tannin powder is sprinkled on the surface several times a day for some days, to dry it. A dark crust forms, which loses color in three or four days, and in two weeks comes away, leaving a reddish scar, free of tattoo marks, which in a few months is but slightly noticeable. It is well to do the work in patches about the size of a dollar at a time. The person can thus go on with his usual occupation.

PAPAIN IN REMOVAL OF TATTOO MARKS.

Ohmann-Dumesnil recommends the following for removal of tattoo marks:

℞.	Papainæ	ʒiss	6	
	Acidi hydrochlorici dil	m. xv	1	
	Aquæ destil	℥i	32	
	Glycerini	℥iii	96	

M. Rub the papain in a mortar while adding the mixture of water and acid, allow the paste to stand an hour, add the glycerin and in three hours filter. Sig.: For local application three or four times daily.

Eczema Capitis.

In this form of eczema, Joseph Max, in *Med. News*, prescribes the following to destroy the pediculi when present:

R.	Hydrarg. chloridi corros.	gr. i		06
	Vinegar	℥i	32	

M. Sig.: Apply twice daily.

In a few days apply the following ointment:

R.	Hydrarg, oxidi rubri	gr. iv		25
	Sulphuris sublim.	gr. xx	1	33
	Ol. bergamotæ	gr. viii		5
	Vaselini q. s. ad	℥i	32	

M. Sig.: Apply locally once or twice daily.

Treatment of Diabetes.

The *Ther. Gazette* contains the following combination containing boric acid, which it is claimed has been of curative benefit in treatment of diabetes. The cases in which it was used were young persons:

℞.	Acidi borici	gr. xx	1	33
	Glycerini	ʒi	4	
	Liq. arsenici hydrochlor	m. v		33
	Liq. strych. hydrochlor	m. x		66
	Aquæ destil. q. s. ad	℥i	32	

M. Sig.: To be taken at one dose and repeated three times a day.

The arsenic and strychnin preparations are of one per cent. strength as contained in the British Pharm., and consequently the above dose of strychnin is on the border line of danger and probably should never be prescribed in such size doses. It should be prescribed in doses of three to five minims.

For the Neuralgic Pains in Tuberculosis.

The following liniment is prescribed by the *Monthly Encyc. of Pract. Medicine*:

℞.	Menthol.			
	Spts. chloroformi, āā	ʒiii	12	
	Chloralis hydratis	℥ss	16	
	Spts. camphoræ	ʒiii	12	
	Alcoholis q. s. ad	℥iv	128	

M. Sig.: To be applied locally and thoroughly rubbed in.

For the night sweats, the afternoon bath and friction, or the administration of atropin or argaracin, are usually sufficient: in persistent cases potassium tellurate in daily doses of one-half grain to be taken at night. For the irritating cough, unaccompanied by expectoration, heroin in doses of one-twelfth to one-sixth grain is valuable.

Headache from Eyestrain.

Dr. Casey A. Wood, in *Med. News*, states that this form of headache is most frequently encountered in strain of the ciliary muscles. He recommends very cold or very hot compresses, gently pressed over the closed eyes and forehead and advises them to be repeatedly changed for ten minutes. and repeated every hour while the headache lasts. For local application he recommends:

℞.	Spts. camphoræ	℥ss	16
	Spts. lavendulæ		
	Alcoholis, āā	℥iss	48

M. Sig.: Apply locally; or:

R.	Camphoræ		
	Tinct. aconiti		
	Ol. menthæ pip. āā	ʒi	4
	Chloroformi	℥ss	16
	Alcoholis q. s. ad	℥iii	96

M. Sig.: Shake well and apply every two or three hours.

He further states that relief may be obtained by applying the galvanic current to the eyes, using a current strength of three to five milliamperes, and placing the positive pole to the nucha, and the negative to the closed lids, for five or six minutes.

Ointment for Acute Eczema.

Wendle, in *Jour de Méd. de Paris*, recommends the following:

℞.	Acidi camphorici	ʒi	4
	Bismuthi subnitratis		
	Zinci carbonatis		
	Pulveris amyli		
	Vaselini		
	Lanolini (anhydrous) āā	ʒii	8

M. Sig.: Apply locally to the affected parts.

Ergot in Diseased Conditions of the Prostate.

E. R. Corson, in *Merck's Archives* recommends the following, which he finds useful, especially in congestion and inflammation caused by gonorrhea:

℞.	Tinct. aconiti	ʒi	4
	Tinct. gelsemii		
	Antipyrini, āā	ʒii	8
	Ergotol	℥i	32
	Aquæ destil. q. s. ad	℥iv	128

M. Sig.: One dessertspoonful in a wineglass of water every two or three hours.

He states that the action of ergot is aided by a combination with a potash salt, generally the bromid.

Ointment for Varicose Ulcers.

℞.	Acidi carbol	ʒss	2
	Acidi borici	ʒiiss	10
	Camphoræ	ʒii	8
	Ichthyol	ʒv	20
	Ol. amygdalæ dulc.	ʒiiss	10
	Ung. zinci oxidi	℥iiiss	112

M. Sig.: Apply externally night and morning.

Treatment of Epistaxis from Any Cause.

Dr. P. Chevallier, as quoted in *St. Paul Med. Jour.*, recommends injections of gelatinized serum prepared as follows:

℞.	Sodii chloridi	ʒii	8
	Aq. destil	Oii	1000

M. To this solution add gelatin in proportion of 10 parts to the 100 and sterilize. This becomes solid when cooled, but can be warmed in a waterbath when needed. As an astringent powder the following is recommended:

℞.	Acidi borici		
	Pulv. sacchari, āā	lxxv	5
	Antipyrini		
	Acidi tannici, āā	gr. xv	1

M. Sig.: To be blown upon the bleeding surfaces.

If it is not then checked, packing the nostril will have to be resorted to.

Treatment of Furuncles.

Philipson, as published in the "New Year-Book of Med.," recommends salicylic acid in 50 per cent. strength in treatment of well-formed furuncles. The following paste is applicable for such conditions:

℞.	Acidi salicylici	℥i	32
	Pulveris amyli	ʒi	4
	Lanolini	℥i	32

M. Sig.: Apply locally and change three or four times a day in order to hasten the necrotic process.

When the core has been eliminated, he advises treatment which will favor granulations. Minute furuncles may be checked by applying the following:

R.	Tincturæ benzoini	ʒi	4
	Alcoholis—puri—q. s. ad	℥iii	96

M. Sig.: Apply locally three times a day.

In generalized furunculosis the parts should receive a warm bath daily and then be rubbed with the following:

R.	Acidi salicylici	gr. xxv	1|66
	Vaselini q. s. ad	℥ii	64

M. Sig.: To be well rubbed in over the affected area.

Societies.

COMING MEETINGS.

Southwestern Iowa Medical Association, Creston, Ia., Feb. 21, 1901.

Tri-State Medical Association of the Carolinas and Virginia, Richmond, Va., Feb. 26, 1901.

Medical Society of the Missouri Valley, Omaha, Neb., March 21, 1901.

West Texas Medical Association.—At the meeting of this Association, held in San Antonio, January 3, resolutions passed opposing the unrestricted sale of morphin, cocain and other poisonous drugs and favoring legislation in that direction.

Calcasieu Parish (La.) Medical Society.—The physicians of St. Charles and of Calcasieu Parish organized this Society. February 4, and elected Dr. Erastus J. Lyons, St. Charles, president; Dr. V. A. Miller, Lake Arthur, vice-president, and Dr. C. Pearl Munday, West Lake, secretary and treasurer.

Cripple Creek District (Colo.) Medical Society.—At the semi-annual meeting of this Society, held at Cripple Creek, January 30, the following officers were elected: Dr. William J. Chambers, president; Dr. Harry S. Torrance, and Francis J. Crane and Marion A. Latimer, Victor, vice-presidents; Dr. Benjamin B. Frankle, secretary, and Dr. J. Ernest Meiere, treasurer.

Quarter-Century Medical Club.—This Society, whose membership is made up of those who have practiced medicine for five-and-twenty years or more in Detroit, Michigan, held its annual meeting and banquet, January 30. Dr. Eugene Smith was elected president; Dr. H. A. Cleland, vice-president; Dr. John G. Johnson, treasurer, and Dr. Robert A. Jamieson, secretary.

Northeastern District Medical Society of Michigan.—This Society held its forty-ninth annual meeting in Flint, January 31, and elected Dr. Philip A. Knight, Utica, president; Dr. George S. Ney, Port Huron, vice-president; and Dr. A. Henri Cole, Port Huron, secretary and treasurer. This is said to be the oldest medical society in Michigan and takes in St. Clair. Macomb, Lapeer, Genesee and Sanilac counties.

Shawnee County (Kan.) Medical Society.—The Topeka Academy of Medicine and Surgery has been disbanded and the Shawnee County Medical Society was organized in its place, at Topeka, February 4, in accordance with the plan of the committee of The American Medical Association. There were 24 charter members present, and the following officers were elected: Dr. Lewis Y. Grubbs, president; Dr. Herbert L. Alkire, vice-president; Dr. Josiah P. Lewis, treasurer, and Dr. William E. McVey, secretary.

Salt Lake Medical Society.—The last meeting of this Society was devoted to the steps to be taken to prevent the passage of the anticompulsory vaccination bill now pending in the legislature. A committee was appointed to guard the prerogatives of the health board against any invasion. This committee will go before the legislative committee that has the bill in hand and lay before it the reasons for their opposition to the bill.

Eastern Hampden (Mass.) Medical Association.—The twenty-first annual meeting of this Association was held at Springfield, January 31, when these officers were elected for the ensuing year: Dr. Walter R. Weiser, Springfield, president; Dr. George W. Rawson, Amherst, vice-president; Dr. Vincent J. Irwin, Springfield, secretary and treasurer; Dr. George L. Woods, Springfield, censor. Dr. J. M. Fay, Northampton, read a paper on "Etiology." Dr. Angelo O. Squier, Springfield, was toastmaster.

PAN-AMERICAN MEDICAL CONGRESS.

Held in Havana, Cuba, February 4.

The Third Pan-American Medical Congress can not be said to have been a success in every particular. The scientific program, as printed, made one anticipate a large amount of scientific work, an anticipation that was not realized. A large number of those whose names appeared on the program were not present, and while a few of these sent their papers, many did not. This was especially noticeable as regards those from the United States.

The number present was far from satisfactory, and as a result the sections were very poorly attended. The following was the registration according to countries: Mexico, 7; Guatemala, 2; Nicaragua, 1; Argentine Republic, 3; Porto Rico, 3, Peru, 2; Venezuela, 2; Brazil, 1; Cuba, 26; United States 77; Canada, 2; Honduras, 1. The Congress being divided into twenty-two sections, many of these did not materialize as far as was observed. The sections on gynecology and abdominal surgery, general medicine and ophthalmology, seemingly, were the most interesting and attractive, and the number in attendance on the first two mentioned was often as great as fifteen or twenty, but a half dozen to a dozen was a common average in most of the sections.

The general sessions, from the point of view of those who understand Spanish, were more or less successful, but to those who did not speak the language of the Cubans it could hardly be said that they were entirely satisfactory. The first general session, which was dignified by the appellation" Solemn Inaugural Session," was held on Monday evening at the "Gran Teatro de Tacon," the largest theater in Havana. The house was filled with the elite of the city, in all the glory of full dress and Spanish beauty. The meeting was presided over by Dr. Wood, the Governor-General, whose few choice words of welcome were the only ones spoken in the English language. The secretary-general made his report, and the president of the Congress, Dr. Fernandez, delivered an address of welcome occupying about twenty minutes. Then followed the principal address of the evening, an hour long, by Dr. Eusebio Hernandez, the subject being obstetrics, certainly not a very appropriate one for a mixed audience, that is, from the view point of an American. Thus the entire evening, with the exception of the five minutes by General Wood, was occupied by those speaking Spanish.

Etiology of Yellow Fever.

The most important scientific development of the Congress was the report made by Dr. Reed of his experiments on yellow fever. Major Reed's request to General Leonard Wood for $5000 for the purpose of hiring men to submit to these experiments and to the bite of the mosquito was granted on condition that the men should be apprised of their danger and sign papers to that effect: "that it should be of their own free will in every particular, and that, in case of Spaniards, the Spanish consul's permission should be obtained." They were paid $250 each. Major Reed's paper is printed in full in this issue of The Journal, p. 431, also an editorial comment, p. 446.

DISCUSSION.

Dr. Louis Perna, Cienfuegos, Cuba, in opening the discussion, said that it is sophism to believe that *post hoc ergo propter hoc*, that is to say, that as Carmona, Freire, Sanarelli and others have fallen to this error, we must not be too precipitate in accepting the result of statistics. The studies made of mosquitoes are very old. A French physician, who died about 1850, expressed the opinion that malaria, yellow fever and cholera w [illegible] mosquitoes. Dr. Perna also criticised the [illegible] by the Commission in making experiments on human beings and is entirely opposed to such experiments.

Dr. San Martin eloquently defended, and with strong arguments, the high scientific standard of the experiments as carried out by this Commission, and also brought out the point that it was not statistics but facts that this Commission presented.

Dr. H. B. Horlbeck, Charleston, S.C., expressed his opinion that the problem of 200 years was about to be solved, that the old quarantine regulations should be greatly modified. He also described the existence of a pine belt within a short distance of Charleston, S. C., in which yellow fever never developed as an epidemic, although the afflicted therewith would go there during the existence of the epidemic in Charleston, would die from the disease and yet it would not spread. Mosquitoes are not known in that region, and probably this is the true explanation of the above fact. He concluded by emphasizing the inestimable value of these experiments if they prove to be true.

Dr. Emilio Martinez, Havana, laid emphasis on Dr. San Martin's views. He took up the moral question and claimed that without these no truth could have been found.

Dr. Manuel Gutierrez, Mexico, who up to within a short time had been adverse to the theory of the transmission of this disease by mosquitoes, now accepted as incontrovertible the results of the experiments of the Commission. He followed with interest many of the experiments, and as a member of the Commission saw most of these cases, which he had no hesitation in pronouncing typical cases of yellow fever. A fact which impressed him forcibly was the absolute control of the epidemic by Dr. Reed. The cases would develop or not as he wished. He does not think that the mosquito should be called the Culex fasciatus. Giles' description of the Culex tiniads mosquito agrees more closely than with the Culex fasciatus. He describes the difference between them. He is inclined to consider them a genus apart because they lay different eggs.

Dr. C. Finlay, Havana, expressed his admiration for the work of the Commission. He believes that this session of the Congress will go down in history as of great importance, and that the differences between his opinion and that held by the Commission will disappear in the course of time. He states that they were based on the fact that he investigated with three varieties of mosquitoes, while the Commission has been restricted to one variety; that the board was placed upon better footing for obtaining satisfactory results; that the negative result obtained by the inoculation of mosquitoes of short infection should not induce the Commission or the board to make such hard and biased rules as are evidenced in its conclusions.

Dr. Reed, in conclusion, said he was profoundly impressed with the interest and attention given to these experiments. In regard to the moral aspect of the case, he did not think that any one appreciated the position in which he found himself—the difficulties that beset his path. The first experiment was made on a member of the board, Dr. Carroll. The senior member expected to take his bite in turn, but was unexpectedly called north. As no animal could be given the disease, and it was useless to follow the previous indefinite experiments, it was absolutely necessary to make these experiments on human subjects, or otherwise volumes could have been written and discussed and yet we would have been no nearer the truth than at first. No progress could have been made toward an exact knowledge of the disease unless human subjects had been used. All experiments were performed upon persons who had given their free consent.

In reference to the remarks of Dr. Holbeck, of Charleston, the disinfection of vessels should by no means be dispensed with, but only of such articles as bedding and clothing, though it is necessary to get rid of the mosquitoes, and this simplified the process of disinfection.

In regard to the remarks of Dr. Gutierrez, in reference to the name of the mosquito, Dr. Howard, of Baltimore, told him that Culex fasciatus is identical with Culex tiniads as described by Giles. Theobolt separates Culex tiniads from the genus Culex and places it in a new genus, Stegamina. These lay their eggs in a peculiar way, and there is also a difference in the anterior claws of the male insect from those of the other Culex. There is also a difference in the larva of the Culex fasciatus. It is very interesting also to note the fact that this is the very mosquito that Dr. Finlay used in his experiments, and that this particular mosquito does not belong to the genus Culex, therefore malaria has a genus of its own, Anopheles, and yellow fever the genus Stegamina.

Resolutions on Dr. Wm. Pepper.

A committee consisting of Drs. R. G. Curtin and Hudson Makuen, both of Philadelphia, was appointed to prepare resolutions on the death of Dr. Wm. Pepper. It reported the following, which was adopted:

It is with unfeigned sorrow that we mourn the death of our honored president, Dr. Wm. Pepper, who organized the Pan-American Medical Congress, and who so ably and successfully presided over the first two meetings. To his wise supervision is due much of the success of the Congress since its inception. At this time we especially feel the loss of his guiding hand and his executive ability to help us in achieving still greater success. In our grief we are not alone, for many and various enterprises are hampered by the absence of his painstaking care. Let his example of untiring industry and the memory of his useful life spur us on to carry out the important work planned by our beloved president, Dr. Wm. Pepper. May the crown of glory which he richly deserves be his, is the prayer of his associates of the Pan-American Medical Congress.

Officers for 1903.

The next place of meeting is Buenos Ayres, in 1903. The committee representing the United States consists of Drs. C. A. L. Reed, Cincinnati, Ohio, president; A. Vander Veer, Albany, N. Y., vice-president; Ramon Guiteras, New York City, secretary, and H. L. E. Johnson, Washington, D. C., treasurer.

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(To be Continued.)

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Section on Gynecology.

Meeting January 17.

John C. DaCosta, M. D., Chairman.

Cancer of the Cervix and Pelvis Following Supravaginal Hysterectomy.

Dr. Chas. P. Noble read a paper, on this topic. He said that one of the arguments used in favor of total as against supravaginal hysterectomy for fibroid tumors of the uterus or for extensive inflammatory disease of that organ and its appendages, was that in a definite percentage of cases the cervix, if left in the pelvis, subsequently becomes the seat of carcinoma. A few cases of this kind have been reported, and these are always referred to in papers written from this standpoint, so that it is made to appear that there is considerable risk of carcinoma if the supravaginal hysterectomy is employed instead of total hysterectomy. His own experience, which embraced more than 175 supravaginal hysterectomies for fibroid tumors, and a larger number for inflammatory diseases of the appendages, had not borne out this contention, but on the contrary indicates that carcinoma following supravaginal hysterectomy is an exceedingly rare occurrence. On March 7, 1895, the following case was operated on in his own service at the Kensington Hospital for Women. Mrs. D., aged 35, who had had three children and one miscarriage, had suffered from menorrhagia and had had numerous attacks of pelvic peritonitis. Abdominal section disclosed a fibroid tumor of the uterus the size of a cocoa-nut, a left ovarian cyst and a right hydrosalpinx. These structures were adherent in the pelvis and the tumors were edematous and infiltrated with inflammatory products. Supravaginal hysterectomy was performed, removing the ovarian tumor and appendages, the fibroid tumor and the corpus uteri. The atypical condition of the tumor was noted but attributed to the repeated attacks of peritonitis, from which the patient had suffered. She made a fairly good recovery, and was discharged from the hospital on April 7. Unfortunately no detailed study of the specimen was made and no microscopic sections were examined.

Four months after the operation the patient began to bleed irregularly from the vagina. Eight months after the operation Dr. Applebach made a pelvic examination and found that the pelvis, vagina and cervix were involved in an extended carcinoma. The patient died a few months later, about one year after the operation. As the specimens from this case were not examined it is impossible to say definitely which was the primary seed of the carcinoma, but in view of the history both before and after the operation there is good reason to believe that a carcinoma of the body of the uterus existed as a complication of the fibroid tumor at the time of the operation, and that this disease had already involved the broad ligament when the hysterectomy was performed. This case was reported not so much because of its value in itself as because of the negative value of his own experience with reference to the appearance of carcinoma in the cervix left after a supravaginal hysterectomy. This was the only one which he had made and in this there was every reason to believe that unrecognized carcinoma existed at the time of operation.

Ovarian Cyst: Suppuration: Hematocele.

Dr. Geo. Erety Shoemaker read a paper on this subject. D., married, aged 48, with eight children and no miscarriages, was a patient of Dr. Fries. She had been tapped several weeks before coming under observation, and ten quarts of thin chocolate-colored fluid removed, disclosing a remaining mass in the upper abdomen. The abdomen had rapidly become again distended on her admission to the Presbyterian Hospital, and then contained a large cystic tumor which was somewhat irregular on its upper surface and presented many of the characteristics of an ovarian cyst, except that a possible origin in the upper abdomen could not be disproved. Eighteen months before, when her last child was born, no tumor was felt. The patient was very stout, was jaundiced, and had a very irritable stomach, while a trace of albumin and a few hyaline casts appeared in the urine. At the operation the tumor was found to be a cyst of the left ovary and was removed. The ovary of the opposite side contained a small hematogenous cyst and was removed with the hydrosalpinx of the same size. The semi-solid contents of chocolate-colored fluid measured about 10 quarts. Adhesions were marked over the anterior surface of the tumor, probably owing to the tapping. There were considerable adhesions to the transverse and descending colon and a considerable stripping of the peritoneal cover occurred on the left side. Some uncertainty was felt as to the complete control of hemorrhage from an area in the mesocolon near the sigmoid flexure. There was some tendency to subperitoneal bleeding; as it did not appear to be persistent or definite after some hesitation irrigation with hot saline solution was used and the abdomen closed. There was much fatty deposit behind the peritoneum and about the large intestine, the patient being somewhat obese. She recovered slowly, after much vomiting for the first day or two, a symptom to which she had been subject for some time. The patient was most unruly and difficult to manage. The slight jaundice persisted. About a week after the operation a pelvic examination was made and there was found, distending the tissues around and between the rectum and the vagina, and on both sides of the uterus, a more or less indurated mass. This became quite hard, but about four weeks after the operation gradually softened and obscure fluctuation was obtained behind the cervix, the temperature being at this time irregular, with some sweating and a feeling of rectal pressure. The diagnosis of pelvic hematocele which was undergoing suppuration was made. The source of the blood was thought to have been the vessels in the mesocolon and in the neighborhood of the sigmoid which had been injured in the separation of the strong adhesions in this region. Incision immediately behind the cervix gave exit to several ounces of blood and of pus with small black clots. The cavity from which this came was shallow, very irregular in outline, and appeared to contain shreds of blood-clots which had not yet broken down. A drainage-tube was inserted and iodoform gauze packed in the vagina. Under careful irrigation the discharge became rapidly diminished and the patient's temperature became normal and remained so. Complete recovery followed. This collection of blood must have been subperitoneal, as it surrounded and more or less fixed the rectum. After it had become consolidated the pressure on the rectum was a source of great distress to the patient, who complained rather of pressure than of pain. She had considerable difficulty in having a stool, owing to the presence of this induration. The vaginal incision was made about five weeks after the laparotomy. The jaundice disappeared in about eight weeks. She was discharged in good condition.

Salpingitis: Obscure Localized Symptoms.

DR. SHOEMAKER also reported this case: H. H., 25 years old, single, colored, was admitted to the wards of the Presbyterian Hospital with a history as follows: Her previous health had been good. She menstruated normally. In August, 1900, three months before admission, she had an attack of abdominal inflammation characterized by vomiting, pain in the right abdomen opposite the umbilicus, slight jaundice, and irregular temperature—103 degrees. She slowly recovered, but afterward had more or less distress in the lower abdomen, referred to the region of the appendix. This distress was increased by lifting and working. Two days before her admission the patient, while menstruating, had gotten her feet wet washing a pavement. The next day she had chilliness, great pain all over the abdomen, vomiting, constipation and elevated temperature. She was admitted to the surgical ward with the supposed diagnosis of appendicitis. The doctor was asked to see her in consultation with the surgeon on duty. When seen by him she had been ill five days. The tongue was coated a dirty white, somewhat dry, and while vomiting had been severe it had ceased. There was slight jaundice, the face was anxious and the greatest pain complained of was in the region of the gall-bladder; the epigastric tenderness, however, was most marked on both sides, just above Poupart's ligament, and the muscular rigidity, while not marked, was present in the left abdominal quadrant, and the tenderness extended up over the region of the appendix. The tenderness being too great for a pelvic examination, ether was given for diagnosis, with the result that nothing could be felt in the upper abdomen and no mass in the region of the appendix. In Douglas's cul-de-sac were felt prolapsed coils of intestine which, when displaced, gave the sensation of the parting of very slight adhesions. Both tubes and ovaries were slightly enlarged and thickened; the uterus was restricted in mobility and forward.

The diagnosis of acute salpingitis was made, with the reservation of a possibility of a coincident involvement of the appendix. On this diagnosis the patient was transferred to the gynecological department, under his care. As the attack was five days old, the temperature range was improving, vomiting had ceased, and the pulse was good, ranging below 40. The expectant treatment was continued and ice was ordered over the lower abdomen. During the next week the point of greatest tenderness varied from the epigastrium to McBurney's point, and across the whole lower abdomen. At times palpation of the epigastrium was impossible. The muscular rigidity, however, disappeared in the lower abdomen, and the general condition gradually resumed its normal appearance, except for the slight pelvic tenderness. The patient was confined to bed and the attack allowed to subside, and, five weeks after the onset, abdominal section was performed. Owing to the slight jaundice, the persistent high location of pain and tenderness, and the rather slight situation of the inclination, it was supposed that the appendix would be found involved with the tubes. The incision was, therefore, made one inch to the right of the median line and through the right rectus muscle. The inflammatory disease was found to involve chiefly the uterus and adnexa, the appendix dipping down into the pelvis, however, and was slightly adherent by its tip to the enlarged right ovary, but its walls were not inflamed and there were no adhesions throughout its continuity. It was, therefore, not removed. There was capillary congestion and a roughening of the peritoneum over several coils of small intestine in the lower abdomen. The omentum was slightly adherent to the anterior pelvic brim. Both tubes and ovaries were buried in dense adhesions. The right tube was contorted and the uterine extremity normal for about an inch. The fimbriated extremity was completely destroyed by inflammation. Two pockets of inflammatory material occupied the lumen of the tube, the outer one containing yellowish pus in flakes, the inner one swollen rugæ covered with flakes of inflammatory lymph. The right ovary was buried with the tube and under the inflammatory exudate contained a cyst of 1½ inches in diameter. Its contents were thickened and bloody fluid. The tube and ovary were with some difficulty freed, tied off and removed. The left ovary, when freed from adhesions, was found to be nearly normal in size. The left tube was inflamed and three-fourths of an inch in diameter. After separation from its bed of adhesions, bloody, semipurulent material could be squeezed from its outer opening. There was free oozing from the fimbriæ and from the adhesions, even after irrigation and sponge pressure. The lifting of the tube was considered unsafe on account of the free oozing and the danger of infection from the tubal contents. It was, therefore, removed with a portion of the corresponding ovary, the remaining portion of the ovary being left with the hope of maintenance of some function. Irrigation with saline solution, careful peritoneal toilet of the wound by through-and-through silkworm gut sutures and catgut to the aponeurosis was followed by satisfactory recovery.

DR. C. P. NOBLE cited the case of a patient treated for salpingitis by an able medical man. She had had three recurrent attacks in his hands, when the speaker was called in consultation. Three physicians agreed that the patient had salpingitis, so he operated. The appendix was in the pelvis, was inflamed, and agglutinated in a mass of exudate was the appendix, the ovary and tube. Under these circumstances a correct diagnosis was impossible; the exudate was in the pelvis, where it would be found if the disease was salpingitis. In the appendicular region the parts felt normal on palpation. Under these circumstances it was impossible to make a diagnosis. In the case referred to by Dr. Shoemaker, where the tubes were lay their eggs in a peculiar way, and there is also a difference in the anterior claws of the male insect from those of the other Culex. There is also a difference in the larva of the Culex fasciatus. It is very interesting also to note the fact that this is the very mosquito that Dr. Finlay used in his experiments, and that this particular mosquito does not belong to the genus Culex, therefore malaria has a genus of its own, Anopheles, and yellow fever the genus Stegamina.

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Dr. Shoemaker, in closing the discussion, said, in regard to the post-operative hemorrhage that he thought it was subperitoneal for the probable reason that, on opening the collection, it was found occupying the median line, involving Douglas's pouch. In one case the mass was as large as a child's head, obliterating the vagina behind but not involving the sides of the uterus, vagina or rectum. In two other cases, occurring recently, the Douglas pouch had been opened and there the same definite location of the collection in the median line found. Subperitoneal hemorrhage is quite possible and is sometimes seen in operations where the vessel is low down, particularly in extrauterine pregnancy. Sometimes the whole floor of the pelvis has filled with blood and there is considerable difficulty in controlling the hemorrhage.

His second case was not reported as one of pelvic abscess due to appendicitis, but as a case of salpingitis with some few symptoms of appendicitis, probably reflex. He had been in the habit of examining the appendices and in 10 per cent. of all cases of abdominal section also removed the appendix.

The differential diagnosis can usually be made between appendicitis and salpingitis by the menstrual history being abnormal in the case of salpingitis; by the normal feeling of the tubes when examination is conducted under the influence of ether, bimanual examination demonstrating the normal condition of the tubes; by the lower situation of the inflammatory mass in case it is tubal—this is particularly demonstrable through the rectum; by the characteristic history of appendicitis, the short onset without the causes which would tend to produce salpingitis, the sharp onset of localized pain and muscular rigidity being alike in both conditions. Vomiting is not common in salpingitis as it is in the intestinal lesion, and the pain is referred to the epigastrium in appendicitis but not in salpingitis. In the case reported this symptom made the diagnosis more difficult.

CHICAGO SOCIETY OF INTERNAL MEDICINE.

Regular Meeting held January 15.

The President, Dr. John A. Robison, in the chair.

Chlorosis.

Dr. Gustav Fuetterer read a paper on "Chlorosis, Its Diagnosis and Treatment, and Its Relation to Tuberculosis and to Round Ulcer of the Stomach." This will be printed in The Journal.

The Blood in Anemia.

Dr. Joseph A. Capps followed with "A Preliminary Report on Some Observations of the Blood in Anemia." He said that, in order to fully understand the pathology of the various anemias, we must definitely determine whether the destruction of blood is general or selective in character; whether the blood loss takes place in the serum or corpuscles; whether the cell in giving up its hemoglobin also loses its protoplasm. The brunt of the attack is undoubtedly borne by the corpuscles, for however important a rôle the serum may play in its chemical functions, it undergoes relatively slight physical changes in either health or disease. No material alteration takes place in the specific gravity of the blood serum in most of the severe pathologic conditions, with the exception of hydremic and post-hemorrhagic states, while the influence of the physiologic taking in and execretion of liquids is slight (Schmaltz). The researches of Hammerschlag, V. Limbeck, and others have taught us that varations in specific gravity of red corpuscles, e. g., changes in their chemical affinity for iron, of the blood as a whole depend primarily on disturbances of the changes in their number and their size and changes in their ability to absorb or lose water.

A priori an increase or diminution of the hemoglobin might be explained entirely on the basis of chemical affinity without regard to the size of the cell body, and this view is held by many hematologists. From this standpoint we may consider that in anemia qualitative changes of a degenerative character lessen the power of the corpuscle to take up iron. On the other hand, there is much evidence to show that quantitative as well as qualitative changes take place in the cell and influence the hemoglobin content.

Several methods have been used to calculate the size of the red cells. Measurement of the cell diameter with a micrometer ruling has afforded fair results, but this gives one dimension only. The depth can be told roughly by the presence or absence of a central light area in the red corpuscle which takes a faint stain; or by observing the thickness of the disc when lying on edge in a fresh drop. These methods obviously are inaccurate and unreliable.

The centrifuge yields the only satisfactory results, taken in conjunction with a careful count of the red cells with a Thoma-Zeiss instrument. The percentage volume of the red cells as a whole, as obtained from the graduated capillary tube, is divided by the percentage number of red corpuscles, which gives the percentage volume of the individual corpuscle.

For this quotient he is aware of no term that has been employed; he therefore suggested the name of "Volume Index," which is self-explanatory and is easily associated with the familiar term "color index." Thus a reading of 45 on the tube=90 per cent.; the red cells number by count 3,750,000 or 75 per cent.; then 90/75=1.20 volume index or an increase of 20 per cent. above the normal in the volume of the average cell.

It is generally believed that the erythrocytes are smaller than normal in chlorosis and larger than normal in pernicious anemia, but very few observers have accurately measured these variations and studied their relations to the hemoglobin and blood as a whole.

Herz (*Virch. Archiv*) claims to have found acute swelling of the cells without a rise in the hemoglobin after hemorrhage and peritonitis. He says that the cells in chlorosis are swollen or normal, never small. A chronic hypertrophy was found by him in Hodgkin's disease and in cachexia, while an atrophy of cells occurred in certain secondary anemias. Von Limbeck observed enlargement of the cells by measurement of diameters in catarrhal jaundice.

Thus we see that in chlorosis and most secondary anemias we have a lowering not only of the color index, but of the volume index as well. Without doubt the color loss precedes in time the loss in size and is always much more pronounced. In one case the color index fell to .45, whereas the volume index never fell below 5.7. Mild cases, or those recovering, exhibit a normal volume index while the hemoglobin is still deficient.

The process of impoverishment seems very similar in chlorosis, and the so-called secondary anemias except for the tendency of the red corpuscles in chlorosis to resist more successfully a reduction in number. As a result of this fact recovery is more rapid in chlorosis. There are, however, many cases of chlorosis where the number of cells and the volume index are much lowered, and these patients get well slowly, resembling secondary anemias. Conversely we must bear in mind instances of secondary anemia that are poor in hemoglobin, but almost normal in the number of red cells. Many examples occur, therefore, where it is impossible to state from the blood examination whether they are chlorotic or of the secondary type, and lead us to believe that chlorosis is but one of the clinical varieties of secondary anemia.

In pernicious anemia, instead of a shriveling of the red cell, we have a hypertrophy to correspond with the heightened color index. This hypertrophy does not simply *keep up* with the high color index—it nearly always surpasses it by a safe margin. Since the most sweeping destruction of red corpuscles takes place in this disease, we may look upon this increased size of the remaining cells as a sort of compensatory hypertrophy that largely enhances their efficiency in carrying on the work of oxidation. The highest volume index was 1.93, which indicates an average cell capacity almost twice the normal. This makes it easier to understand how life can be maintained with 500,000 red corpuscles or less to the cubic millimeter.

Bearing on this idea of compensatory hypertrophy he has observed that a similar process tends to operate in *all forms* of anemia where the red cells have been depleted to 2,000,000 or less. As the count falls below this point we see more and more macrocytes, the volume index tends to increase, the color index rises until both the latter may be normal or above. Hence it is possible for a secondary anemia which has been characterized by a steady loss in cell size and color to reach such a low point that the cells must grow larger in order to sustain life.

There are many other conditions where a knowledge of the volume of the cells may be able to throw some light on pathology, such as jaundice, hydremias, cyanosis and hemorrhage, and these he hopes to study before completing his report.

A study of 14 cases of chlorosis shows that the red corpuscles in all cases have a smaller average diameter than in normal blood. The color index is constantly very low, while the volume index is decreased to a less degree.

The red cells in 24 cases of secondary anemia are also subnormal in diameters. The color index is not so low as in chlorosis. The volume index falls also, but never so much as the color.

The size of the corpuscles in 17 cases of leukemia and the relation of hemoglobin to volume is essentially the same as in secondary anemia. Thirty-one cases of pernicious anemia give a decided increase in the average diameter of the cells. The color index is high and the volume index still higher.

Hydriatics in the Treatment of Chlorosis.

Dr. G. W. McCaskey, Fort Wayne, Ind., read a paper on this subject. He especially disclaimed any intention of advocating hydrotherapy as an exclusive method of treatment, but urged its careful use in selected cases as a most valuable aid. The treatment, he maintained, should be based on a proper conception of the principal pathologic facts, among which were mentioned the oligochromemia, oligocythemia and oligemia. Especial stress was laid on the oligemia as not being fully recognized in dealing with chlorosis, and as indicating a great impairment of the hematogenic organs. Because of the marked decrease in the total mass of blood which undoubtedly exists the blood count may be normal with a serious degree of oligemia. The weakness of the heart with more or less dilatation; a general lowering of the blood pressure because of the heart conditions and vasomotor states; the resulting impairment of function of all the principal organs as a necessary result of the preceding conditions; and the retention of subcutaneous and intravisceral fat and hypoazaturia as a result of defective oxidation and lowered metabolism; and hypoplasia of cardiovascular and genital organs the common embryonic origin of which from the mesoblast was pointed out as a possibly significant fact, furnish the principal indications for therapeutic procedure.

While the administration of iron was advocated, the exceedingly small amount absorbed, coupled with the better therapeutic results claimed from tremendously large daily doses, points to an indirect action of the iron upon the alimentary tract.

The rest treatment in conjunction with iron, the importance of which most recent authorities emphasize, was pointed out as an important factor in permitting recuperation of cardiovascular tone, and in so doing improving the functions of the digestive organs and of the red bone-marrow upon which hematogenesis is absolutely dependent. Some recent writers report cases treated by rest alone, without iron, with favorable results. The writer believes that there is a radical fault in the organ concerned in making red blood cells—which in the human subject is the exclusive function of the red bone-marrow and that the treatment must be directed toward improving the functional activity of this important tissue. The quality of chlorotic blood is the same as that produced by overworked blood-making organs, the parallelism with the final stage of post-hemorrhagic anemia being especially striking. No single therapeutic measure can so directly influence the nutrition and functional activity of the bone-marrow as hydrotherapy. Its anatomical surroundings remove it from all but indirect methods, and after supplying abundance of iron with such a degree of rest as is indicated, forced feeding and special treatment of any organ that may need it, the indirect results of hydriatic measures can favorably modify the bone-marrow in accordance with well known physiologic laws. The observations of Schüller on the vessels of the pia mater after thermal stimulation of the skin; of Naumann, who demonstrated the partial reflex character of these phenomena, and of Winternitz, whose plethysmographic tracings demonstrated the increased volume and tension of blood in areas removed from the direct impress of cold and heat, were cited as a physiologic basis of hydriatic treatment, concerning the efficacy of which the writer has satisfied himself by a considerable personal experience, supporting the views of Struempell, Winternitz, Immermann, Baruch, and others.

Various methods are available, such as the full bath, spray, douche, etc., the guiding principles being to use that degree of stimulation from which the patient will show a healthy reaction, and to use cold very guardedly and as a rule preceding its application by a storage of heat which will permit of the stimulating and tonic influences of cold without resulting depression.

Chlorosis and Metabolism.

Dr. Fenton B. Turck followed with a paper in which he discussed metabolism and the advent of puberty at considerable length. He likewise dwelt on Herring's view of metabolism and its possible applications, and then passed on to a consideration of the relation of metabolism to function. The selective power of cells and the assimilation of inorganic compounds were mentioned. Relapses and failures of treatment by iron were largely due, in his opinion, to the non-recognition of the important rule of metabolism. He detailed his observations on methods of treatment based upon physiologic laws.

Dr. Frank Billings stated that chlorosis occurs in young women somewhere between 13 and 14 and 22 years of age, on the average. It also exists in young men at that age, but the majority of writers do not accept this. Men in whom chlorosis occurs are of a feminine type, and show it in their physique. Chlorosis occurs in girls where there is a large number in the family, though there are exceptions to this. Dr. Billings touched briefly on the different theories that have been advanced regarding chlorosis. If it is a question of metabolism, why does chlorosis select girls? It is a disease one finds in all climates and under all conditions of life. He has seen quite as many cases among servant girls as among others, and has had a large number of cases among the well-to-do. He does not think there is any hygienic basis for chlorosis. It is not due to impaired nutrition, because it occurs among the children of the rich as well as those of the poor. When he had charge of ward 24, in the Cook County Hospital, he had on an average one case of chlorosis in every fifty patients.

In the treatment, he mentioned beef juice. His objection to it is that patients soon disliked it. To take a pint of beef juice every day requires not only great moral force on the part of the patients, but considerable persuasion by the physician to get them to do it. More people can afford milk than the juice which comes from five pounds of beef. He has gone on year after year, until simply at sea, so to speak, as to whether one preparation of iron is any better than another. On the whole, however, he considers the old tincture of iron the best, because it contains hydrochloric acid. It can be given in good doses, say five or ten, or even fifteen or thirty minims. By diluting the iron with pure glycerin, the patients do not object to it, and they feel and do better on *tincture* of iron than upon any other preparation.

Dr. James B. Herrick said that there are many cases of chlorosis unrecognized, consequently untreated, and a great many, though recognized, are neglected by the patients themselves, or by the families, and allowed to go untreated. This is important, because untreated chlorosis may give rise to serious results. It is probable that a permanent impression is made on these patients that is never removed. Trousseau made the statement that when a patient had well-developed chlorosis, the impression made on her was never eradicated, and it was such a patient who, in later years, became nervous, neurasthenic or prematurely old, so that it was very important that the cases should be recognized early and properly and promptly treated. He emphasized the importance of watching patients for a long period of time. The greatest difficulty he has had in treating cases of chlorosis is to get them to return to him for observation for as long a period as he desires. As soon as these patients improve a little, and feel so much better, many of them believe themselves fully recovered, consequently the physician sees no more of them, even though the nature of the disease is fully explained to them.

He regrets the tendency that prevails, to look upon chlorosis as a secondary anemia. It can not be denied that the blood findings are those of secondary anemia. If chlorosis is to be considered as a secondary anemia, it is a class by itself, and it is a secondary anemia in the sense that pernicious anemia is secondary, but physicians do not know the cause of it, and until they do know the cause of pernicious anemia, and of chlorosis, they should look upon them as distinct entities, as the essential anemias, so-called. If physicians looked upon chlorosis and the secondary anemias as practically one and the same thing, the profession would be in great danger of making serious mistakes in diagnosis—at least, so far as the welfare of patients is concerned. He hesitates to make a diagnosis of chlorosis until he has excluded tuberculosis, and on his history sheets not infrequently there is written "Chlorosis," with a note, which reads: "Look out for tuberculosis." And whenever he has a patient with what he calls chlorosis, and has given to her iron in considerable quantity, and fails to see a primary response to the iron, he begins to think there is a mistake in diagnosis; just in the same way that when a diagnosis of late syphilis is made, and the iodid of potassium does not produce immediate response, he fears, perhaps, it is not syphilis; or when a diagnosis of malaria is made and quinin does not promptly relieve the fever, and that then, perhaps, some mistake in diagnosis was made.

Dr. Charles S. Bacon alluded to the habit of tight lacing among young girls during puberty or early adolescence, as a possible causal factor of chlorosis. Tight lacing, he thinks, interferes with respiration and with digestion, and by interfering with digestion it also interferes with the intestinal functions. As tight lacing had some influence in causing constipation, so it will have a bearing on the production of autointoxication, to which several observers have directed attention as being a probable important causal factor. In the hydrotherapeutics of chlorosis the impairment of respiration demands the removal or abandonment of tight lacing.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Meeting held January 21.

Parker Syms, M. D., president.

Pathologic Condition of Houston's Valves.

Dr. James P. Tuttle, in presenting a specimen of this condition, stated that although seventy years had elapsed since Houston had first described these valves in the rectum there were some at the present day, notably Matthews, who even disputed their existence. The specimen, which had been taken from a man of 45, settled conclusively the question of their existence, and showed them in this instance to be markedly hypertrophied. The rectum was almost occluded by two folds of mucous membrane. It was supposed that they afforded additional support to the column of feces, and he is disposed to believe that in some cases at least they may be responsible for the occurrence of obstipation.

Lupus Treated with Galvanocautery.

Dr. W. S. Gottheil exhibited a young woman in whom a lupus of the face had been converted into nearly normal skin by the use of the galvanocautery.

Lupus Vulgaris Treated by Static Electricity and the X-Ray.

Dr. A. C. Geyser read a paper on this topic, and exhibited two patients. One of these, a young woman, had been treated unsuccessfully for considerable periods of time, at almost every dispensary in the city. The other was a man on one side of whose face the *x*-ray had been used, and on the other the static spray. The former was free from hair and smooth. The author said that many methods of treatment had been devised, but none had so nearly approached being a specific treatment as the Roentgen ray. His method consisted in placing between the patient and the *x*-ray tube a screen of lead, with a perforation opposite the diseased area. A "soft" tube should be employed, and daily exposures given at first. The worst case that he had treated by this method, one of nine years' duration, had required forty treatments, but others only eight or ten applications.

Dr. W. S. Gottheil said that some of those present had seen this woman's condition prior to this treatment, and did not hesitate to say that the result was very remarkable. It was certainly new to him, and while elaborate apparatus was required, it should certainly prove very useful for the more obstinate cases.

Exophthalmic Goiter of Syphilitic Origin.

Dr. R. Abrams reported three cases, giving a direct and undoubted history of syphilitic infection, and improving with significant rapidity under appropriate syphilitic treatment. The first had come under observation with an early syphilitic eruption. This had been dissipated by mercurial inunctions, and she had then been lost sight of for six months. On returning, there were mucous patches in the mouth, and a noticeable exophthalmic goiter, associated with dyspnea, tachycardia and great nervousness. This complication had not been benefited by the use of the ordinary remedies for this disorder, but on giving large doses of the iodid of sodium for the relief of nocturnal headache, the exophthalmic goiter had disappeared. The other two cases were quite similar.

Dr. C. W. Allen said that syphilis had often been mentioned as a predisposing cause of exophthalmic goiter, but it was new to ascribe to it such a prominent rôle in the etiology. Iodin and mercury have long been known to be of service in exophthalmic goiter, even when applied externally, yet he has never heard of any postmortem findings in this class of cases pointing to syphilis as a cause.

Dr. W. M. Leszynsky said that in a rather large experience he had not seen a single case of exophthalmic goiter which had seemed to him to have been caused by syphilis, though it was not improbable that the mental depression associated with syphilitic infection might act as a predisposing cause. The so-called therapeutic test should not be interpreted too rigidly, for it is well known that many non-syphilitic inflammatory exudates are dissipated by the use of iodid or mercury.

Cystoscopy in the Female by an Improved Method, with Demonstration on the Cadaver.

Dr. William R. Pryor read a paper on this subject and gave a demonstration of the method. His cystoscope consists of a main tube for inspection and a tube at the side for illumination. The latter extends beyond the inspection tube so that no rays can enter that one. It is important to remember that if the patient assumes the knee-chest position, as in Kelly's method, the very part of the bladder which it is most important to examine will be hidden from view unless certain special devices are used. To obviate this difficulty he recommended that the patient be placed in the lithotomy position and then the head of the table lowered to an angle of about 45 degrees. The refraction which the rays of light must necessarily undergo when the examination is made through water makes this method undesirable, and for other reasons it is apt to introduce other sources of error. With the patient in the position mentioned, on admitting air to the bladder, the latter assumes the shape of an equilateral triangle, and readily exposes to view even the pubic and peritoneal surfaces.

Dr. F. Tilden Brown said that the instrument presented was worthy of high praise, and most useful for purposes of class demonstration, as well as for the simultaneous collection of separate specimens of urine from the two ureters. He insisted that the results of such an examination and analysis are far more exact if the two specimens are collected simultaneously. For this purpose he preferred to use a double-barreled instrument.

Dr. Pryor said that with the double-barreled instrument if tubercle bacilli are found in both specimens it is no proof that both kidneys are tuberculous, and Harris's method is an absolute failure.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held Jan. 9.

President, Dr. J. H. Musser, in the chair.

Gunshot Wound of the Head.

Dr. W. L. Rodman presented a patient who had been wounded in the Philippines. He was 24 years of age and had, in October, 1899, received a gunshot wound in the parietal region, and point of exit was found in the upper part of the occipital. The patient had been under the impression that the wound was produced by a Mauser bullet, and stated that after the injury he became dazed, while afterward unconsciousness came on. The wound being on the left side of the head, there was slight paralysis on the right side. The man suffers from intense headache, and at times appears to be in a state of non compos. Skiagraphs have been taken, showing a foreign body imbedded in the brain substance, and located several inches from the point of entrance of the wound. The question to decide is whether to operate or not.

Dr. L. Webster Fox had made an examination of the eyeground of the man and found the veins and arteries normal. He believed, however, that an operation would prove beneficial.

Dr. F. Savary Pearce read a few notes of the case. The optic center had doubtless been injured to a certain degree, as had the internal capsule. He believed that an operation was indicated. Skiagraphs were then exhibited demonstrating the location of the foreign body.

Hemoglobinuria Complicating Typhoid Fever.

Drs. J. H. Musser and A. O. J. Kelly read a paper on this subject. The latter referred to the literature on the subject, and spoke of the infrequency of this complication. Many modern text-books do not mention it at all. Curschmann had seen two such cases, and Osler had reported one. The patient was a colored man, aged 23 years. The family history had been negative. On Aug. 27, 1900, he had complained of headache, anorexia and, later, fever set in. A typical attack of typhoid became manifest, with rose spots, diarrhea, etc. The Widal reaction had been positive, and tub baths had been used to control the fever. After a few days' treatment hemoglobinuria came on and lasted six or seven days.

Perforation and Perforative Peritonitis in Typhoid Fever.

Dr. William Osler, by invitation, read a paper on this topic, pointing out that until a comparatively recent date, when perforation in typhoid fever occurred, the physician could only fold his arms and await the inevitable consequence. But through the efforts of Leyden, of Germany, and J. C. Wilson, in this country, a change in opinion is apparent, and we can congratulate ourselves that the mortality in typhoid is lower than it was a quarter of a century ago. It is not the complications, such as hemorrhage and perforation, which produce death in the majority of cases, but it is the fatal toxemia. He had found that of 63 cases of typhoid treated at the Johns Hopkins Hospital during a certain period, only one-third had died of perforation. This same rate had not diminished by continuous observation, but there had been a reduction in the number of deaths from toxemia. Accidents of the former character may be divided into two stages: 1, the perforation, and 2, the peritonitis. The indications in such cases are to operate within the first twelve hours after a perforation has occurred. The speaker then detailed the history of 3 cases of typhoid, in order to demonstrate the symptoms and clinical signs of a perforation of the intestine.

In the best equipped hospitals a typhoid patient should not be left in the care of a resident physician, but a skilled man should be constantly in charge. He had drawn up a series of instructions to guide the residents at the Johns Hopkins Hospital: 1. Notify the house physician at once of any marked change in the patient's condition, or any evidences of collapse. 2. The house physician should note the onset of this change, whether intense pain, and whether relieved by ordinary measures, or whether it increased in severity. 3. The state of the abdomen, whether flat or scaphoid, or distended, the character of the respiration, sweating, muscular rigidity; the percussion note, and area of liver dulness. Auscultatory percussion may be of advantage. Examination should be made every three hours. 4. Whether there had been any change in the facial expression, or sudden drop in the temperature with sweating and acute pain. 5. A study of the leucocytes—whether increasing. The speaker stated that in some cases he had noted an increase, but not in all. The red cells should be counted and the hemoglobin estimated. A diminution of the last two might denote impending hemorrhage.

Comparing the results obtained in the treatment of cases of typhoid fever as observed in the war in South Africa, and in the Spanish-American War, it should be noted that in the former instance the mortality had reached 20 per cent., while in the latter it was 7.6 per cent. The speaker believed that the statistics furnished by the physicians composing the army board was the greatest indictment against the diagnostic ability of the members of the profession yet presented.

Of a large number of cases of typhoid operated on for perforation of the bowel, 42.5 per cent had recovered. At the Johns Hopkins, of 16 so treated, 6 recovered, and the speaker believed that when this complication was promptly recognized and treated we would have a means of saving 50 per cent. of the patients.

Dr. Mordecai Price, in discussing the paper, detailed a history of several cases of typhoid which he believed might have recovered had an operation been done. He was under the impression that it was best to operate in all cases of perforation.

Dr. Ernest Laplace thought that the lesson to be drawn was clear—the surgeon should stand in close relation to the physician in the treatment of typhoid. This relation might be the same as that in the treatment of appendicitis.

Dr. James Tyson believes that the main point in this condition was the difficulty of diagnosis. He detailed a case in which there had been sudden abdominal pain, great tympany and other evidences of perforation which had subsided within a short period, and he believes there had not been a perforation. Another important point in the treatment of this condition was the area of the bowel involved. He had also observed, in one instance, pain referred to the end of the penis, referred to by Dr. Osler.

Dr. Joseph Price was glad that a paper of this kind had been read by a physician and not by a surgeon. He had a series of 22 cases, with 10 recoveries. As to resection of the bowel in cases of typhoid, he believes that most die. He believes in an open wound and drainage in these cases.

Dr. G. G. Davis referred to the difficulty in finding a perforation during an operation for this condition. In one instance he had operated on a patient with typhoid under the impression that there was a perforation, but none could be found. In this instance he observed that the patient made an uneventful recovery and stood the operation well. Simple flushing out of the abdominal cavity seems to do good.

Dr. M. H. Fussell referred to a case in which there had been obliteration of the liver dulness. Four hours later all symptoms had disappeared. He did not know what the real condition was.

Dr. W. L. Rodman thought that if an operation was done at all it should be done early. He referred, however, to the reports of Treves and Sir William MacCormac, who had frequently detailed instances in which soldiers had been shot through the bowel, and in whom no operation had been done, and yet recovery had taken place.

Dr. Osler, in closing, stated that he could not recall one instance in his experience in which there had been a recovery from typhoid when a perforation existed. The first fifteen or twenty hours is the most important to the patient. In these cases, what if one should make a mistake when we have a means at hand which if employed might restore to health 50 per cent. of the patients?

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), February 2.

1 *Radical Cure of Inguinal Hernia. A. M. Phelps.
2 The Treatment of Puerperal Fever. H. J. Boldt.

3 *An Operation for the Relief of Stoppage of the Tear Passage, Abscess of the Sac, etc. Erasmus A. Pond.
4 The Malarial Mosquito on the Susquehanna. Harvey B. Bashore.
5 Placenta Previa or Detached Placenta. George W. Squires.

Philadelphia Medical Journal, February 2.

6 *Scurvy, Not Rheumatism. J. P. Crozer Griffith.
7 *Whey-Cream Modifications in Infant Feeding. Franklin W. White and Maynard Ladd.
8 *Proper Methods of Handling Milk for Infant Feeding. George T. Palmer.
9 *The Importance of Instruction in Medical Schools on the Modification of Milk for Prescription Feeding. Andrew H. Whitridge.
10 Intracranial Hemorrhage in the Newborn. W. Reynolds Wilson.
11 *The Causes and Treatment of Urgent and Serious Conditions in the New-Born. Samuel Wolfe.
12 *Otitis Media in Children and its Treatment. H. V. Würdemann.
13 *A Critical Review of the Literature of Mastoid Disease and its Complications. Seymour Oppenheimer.
14 *Diseases of the Ear in Relation to General Medicine. Nathan G. Ward.
15 *Infantile Colic and Colic in Infants. H. Illoway.
16 *The Diagnosis and Treatment of Some Functional Forms of Defective Speech. G. Hudson Makuen.
17 *The Summer Cold: Swimming Pools as an Etiologic Factor. Lawrence F. Flick.

New York Medical Journal, February 2.

18 *A Preliminary Communication with Projection-Drawings, Illustrating the Topography of the Paracœles (Lateral Ventricles) in their Relations to the Surface of the Cerebrum and the Cranium. Edward C. Spitzka.
19 A Case of Arsenical Dermatitis. A. H. Ohmann-Dumesnil.
20 *On the Sterilization of Milk; Its Advantages and Limitations. A. D. Blackader.
21 *Gall-Stones and Empyematous Gall-Bladders. Edwin Ricketts.
22 Appendicitis in the Female. Floyd Wilcox MacRae.
23 *Pharyngeal Adenoids, their Frequency and *Sequelæ*. Philip D. Kerrison.

Medical News (N. Y.), February 2.

24 *Fatty Degeneration of the Heart. Thomas E. Satterthwaite.
25 A Case of Puerperal Sepsis from Retained Lochia (Lochiometra), with Remarks. George P. Shears.
26 *Medical and Sociological Aspects of the Galveston Storm. H. A. West.
27 Infantilism. W. T. English.

Boston Medical and Surgical Journal, January 31.

28 *The Treatment of the Later Phases of Heart Diseases. John L. Heffron.
29 Peritonsillar Abscess. F. C. Cobb.
30 Retropharyngeal Abscess in the Adult. J. L. Goodale.

Cincinnati Lancet-Clinic, February 2.

31 Inguinal Hernia. B. Merrill Ricketts.
32 *Mechanical Means for Inspection of the Rectum. J. Ambrose Johnston
33 *Some Theories for Which I Should Like to See the Profession Try. W. O. Owen.

St. Louis Medical Review, January 26.

34 A Résumé of the Literature of Spinal Anesthesia. M. B. Clopton.

February 2.

35 The Evolution of My Technique in the Treatment of Fibroid Uterine Tumors. Howard A. Kelly. Is it Extra- or Intra-Peritoneal Treatment of the Pedicle, Total Hysterectomy or a Combination of Both. Mary Dixon Jones.

Medical Fortnightly (St. Louis), January 25.

36 Observations Based on the Probable Mode of Formation of Urinary Stone Relative to its Recurrence and Prevention. Reginald Harrison.
37 Huntington's Chorea; Hysterical Insanity with Generalized Analgesia. Charles G. Chaddock.
38 Diseases of the Stomach. J. M. G. Carter.
39 Women in Medicine in Germany. Josephine Milligan.

Medical Age (Detroit, Mich.), January 25.

40 Adenoid Growths of the Post-Pharynx. George H. Gorham.
41 The Perversions of the Sexual Instinct. N. E. Aronstam.
42 Hysterical Phenomena Simulating a Diverticulum of the Esophagus. Carl Weidner.
43 A Plea for Pay Hospitals for Contagious Diseases. J. H. Adams.

American Practitioner and News (Louisville, Ky.), January 1.

44 Epilepsy. Thomas H. Baker.
45 Osteomyelitis. Irvin Abell.
46 The Two Sides. (Relations of Physician and Public.) J. J. Wakefield.
47 Is Vivisection Useful? Symington Brown.
48 A Case of Appendicitis in Which a Lumbricoid Worm Passed Through the Ruptured Appendix into the Peritoneal Cavity. Paul H. Schwankhaus.
49 A New Obstetrical Forceps. Ernest G. Mark.

Journal of Nervous and Mental Diseases (N. Y.), January.

50 Diffuse Degeneration of the Spinal Cord. (To be continued.) James J. Putnam and E. W. Taylor.
51 Report of a Case of Brain Injury, with Peculiar Whistling Spells Following Operation. William C. Krauss.
52 *Brush Massage. Frank R. Fry.

American Journal of Obstetrics (N. Y.), January.

53 Dermoid and Other Cysts of the Ovary; Their Origin from the Wolffian Body. (To be continued.) Samuel W. Bandler.
54 *Arteriosclerosis of the Uterus; with Report of a Case of So-Called "Apoplexia Uteri." Palmer Findley.
55 The Element of Time in Operations. James N. West.
56 *Two Rare Tumors. (1) A Calcereous Uterine Fibroma, and (2) a Fibromyoma of the Urethra. H. G. Wetherill.
57 A Case of Pregnancy in the Rudimentary Horn. Emil Ries.
58 Cesarean Section for Cancer of the Rectum. J. M. Baldy.
59 A Case of Malignant Chorion Epithelioma or So-called Deciduoma Malignum. Abram Brothers.
60 Vaginal Hysterectomy. Carl Strobell.

Kansas City Medical Record, January.

61 Rabies. Arthur H. Wall.
62 Report of Cases—Infected Tumors—Removal. Herman E. Pearse.

Annals of Gynecology and Pediatry (Boston), January.

63 *Gastro-Enterostomy with the Murphy Button in Malignant Obstructions of the Pylorus. Frank T. Meriwether.
64 *Anteflexion—Its Importance and Its Operative Treatment. Rufus A. Kingman.
65 *Clinical Memoranda Relating to Appendicitis. Andrew F. Currier.
66 Abdominal Drainage. A. L. Beahan.
67 *Does a Hole in the Drum-Head Destroy the Hearing: A Popular Delusion Regarding the Human Ear. Edmund D. Spear.

Albany Medical Annals (N. Y.), January.

68 On the Influence of a Hospital upon the Medical Profession of a Community William Osler.
69 Address: Historical Sketch of the Troy Hospital, 1850-1900. C. E. Nichols.
70 Further Notes on Abnormalities of the Urinary System. George Blumer.
71 Surgical Anesthesia by Spinal Subarachnoid Cocainization—*The Corning-Bier Method*. Willis G. MacDonald.

Journal of Tuberculosis (Asheville, N. C.), January.

72 *Tuberculosis of the Middle Ear. Alfred Bruck.
73 Tuberculosis of the Knee-Joint and Other Cases of Orthopedic Surgery. Daniel W. Marston.
74 *The Use of Iodol in the Treatment of Tuberculosis of the Lung. T. Mellor Tyson.
75 A Case of Tuberculous Polyneuritis. Charles J. Aldrich.
76 Care of Tuberculosis. Mrs. Lew Wallace, Jr.

Toledo Medical and Surgical Reporter, January.

77 The Early Diagnosis of Gastric Cancer with a View to its Radical Cure. G. W. McCaskey.
78 Diabetes Mellitus. C. Storx.

Canadian Journal of Medicine and Surgery (Toronto), February,

79 Furuncle in External Ear—Nasal Obstruction and Paresis of Soft Palate. Percy G. Goldsmith .
80 Electro-Therapeutic Sins. H. Newman Lawrence.
81 Rhus Glabra in Enuresis. J. J. Cassidy.
82 Among the Tomes. (Early Canadian Medical Literature, etc.) W. A. Young.

New Yorker Medicinische Monatsschrift, January.

83 *Erfahrungen mit Cocainanaesthesie. F. Kammerer.
84 Sanatogen in der Kinderpraxis. J. G. Wm. Greeff.
85 *Aspirin. A. Toepfer.

The Laryngoscope (St. Louis), January.

86 Some Critical and Desultory Remarks on Recent Laryngological and Rhinological Literature. Jonathan Wright.
87 *Rheumatic Fever in Relation to the Throat. St. Clair Thomson.
88 *Spongyfying of the Labyrinth. J. Holinger.
89 Improvements in Ear Specula. S. S. Bishop.
90 Sarcoma of the Naso-Pharynx, with Report of Cases. John O. McReynolds.

American Journal of Surgery and Gynecology (St. Louis), January.

91 Bottini's Operation for Enlarged Prostate. Geo. M. Phillips.
92 *Drainage in Abdominal Surgery. J. W. Long.
93 How a Country Doctor Treats Chronic Cystitis. Fred S. Clinton.
94 Abdominal Section for Pus-tubes. A. C. Bernays.

95 Operation for Appendicitis which Did Not Exist. E. N. Wright.
96 Abdominal Section for Old Adhesions—One for Fibroid Tumor and One for Complicated Pelvic Lesions. Emory Lanphear.
97 A Reply to Dr. Lanphear's Criticism of the Methods of Eastern Surgeons. Seneca D. Powell.
98 Who Should Operate, and When?—Something of the Relation between the Physician and the Surgeon. Clarence H. Vaught.
99 A Case of Double Intra-Ligamentous Cyst, with Remarks. C. Jeff Miller.
99½ The Treatment of Noma. G. W. West.
100 Removal of a Child's Head by Abdominal Section—Recovery. J. A. Walker.

Medical Herald (St. Joseph, Mo.), January.

101 Double Ureter—Report of a Nephrectomy Done upon a Young Child with this Condition Present. J. E. Summers, Jr.
102 *Spondylolisthesis. John P. Lord.
103 *Contusions of the Eye Producing Obliterating Hyphema. N. F. Weymann.

Carolina Medical Journal (Charlotte, N. C.), January.

104 A Case of Syncytioma Malignum with Metastases in the Vagina. H. A. Royster.
105 The Management of Cardiac Dilatation. Herman B. Allyn.
106 A Plea for the Early Treatment of Hypertrophied Faucial and Pharyngeal Tonsils. L. E. Norfleet.
107 Drinking-Water and the Mosquito as Causes of Malarial Fever. Charles R. Grandy.

Merck's Archives (N. Y.), January.

108 *The Rational Treatment of Pulmonary Hemorrhage. William J. Robinson.
109 Therapeutic Management of Typhoid Fever. Aurele Nadeau.

Southern Practitioner (Nashville, Tenn.), February.

110 Anesthesia and Anesthetics. W. R. Sifford.
111 Successful Hip-Joint Amputation for Tubercular Osteomyelitis by Wyeth's Bloodless Method. Tilman Ramsey.

Dominion Medical Monthly (Toronto), January.

112 *Notes on Gastroptosis, with Reports of Cases. Graham Chambers
113 Double Conical Stump Following Amputation of Both Arms in Utero. Walter McKeown.

Alabama Medical Journal (Birmingham), January.

114 An Unusual Case of Late Syphilis of the Testicle. Dyer F. Talley.
115 Vital Questions in Medicine (Tuberculosis, etc.) T. A. Casey.
116 Broncho-Pneumonia. F. P. Hixon.
117 Eclampsia. E. O. Williamson.
118 Scarlatina. W. M. Cunningham.

Southern California Practitioner (Los Angeles), January.

119 Meniere's Disease—Report of a Case. S. D. Hopkins.
120 *The American Cigaret. F. A. Seymour.
121 Treatment of Acute Opium Poisoning. F. D. Bullard.
122 The Lodge Question. John C. King.
123 Climatology of California. C. G. Stivers.

Southern Medical Journal (La Grange, N. C.), January.

124 Address before Seaboard Medical Association. R. H. Lewis.
125 Oration. The Excellence of Enlightened Effort. J. Emmett Sebrell.
126 *Comparative Value of Laboratory and Bedside Diagnosis. E. C. Levy.

Charlotte Medical Journal, January.

127 *Concerning the Etiology of Asthma. John Dunn.
128 Osteoplasty of the Cranium for Tertiary Lesions of syphilis—Details—Recovery. J. E. Massey, Jr.
129 *Perineal Lacerations. W. C. Brownson.
130 The Syringe and How to Use it. H. S. Lott.
131 The Treatment of Neuralgic and Rheumatic Affections. D. S. Maddox.
132 The Surgical Treatment of Cancer of the Stomach. Frank T. Meriwether.

AMERICAN.

1. **Inguinal Hernia.**—Phelps reviews the methods and history of the operative treatment of hernia and describes his own method of using the silver-wire mattress. He contrasts the Bassini and Halsted operations, pointing out their distinctive features, and claims as original in his own operation the reproduction of large masses of inflammatory material to restore the abdominal wall and the introduction of fine silver-wire filigree through the entire inguinal canal, over the transversalis fascia, adding to the strength of the weakened parts, and preventing stretching of the new material. The cutting off the hernial sac and retreating from the operation exactly as from an abdominal operation, and stitching of the peritoneum and transversalis fascia with a continued suture of fine silver wire, and also the use of fine silver wire with continued suture are claimed as original. He sterilizes this by thorough boiling and steaming, and by putting it in pure carbolic acid a few minutes before operation, after which he dips it into alcohol, holds it over an alcohol flame and thus thoroughly sterilizes it. Drainage should be avoided if possible.

3. **Drainage of Lachrymal Sac.**—The operation described is devised for the free drainage of the lachrymal sac, relieving epiphora and obviating any danger of abscess in one operation. Probing, Pond finds, has been unsatisfactory. The operation is very simple; a long silver probe, with one end blunt and the other with an eyelet large enough to carry a coarse silk string, is threaded and passed through the canal into the nose, where the end is seized with a pair of forceps and drawn out through the nostrils. The probe is then unthreaded and the string left in position with the ends tied together. The string is worn about one week, being drawn through the nose two or three times a day. In tying he makes quite a knot which, when pulled through the canal, makes an opening. He has used this operation for the past four years with good results. The canaliculus may be slit or not as deemed advisable. Most of the operations have been under cocain, but in some he has used ether. There is no pain after the first operation and the string can be drawn without causing any harm. In abscess of the sac the string gives good drainage. Three cases are reported which were severe and of long duration, but were promptly and permanently relieved.

6. **Infantile Scurvy.**—Crozer Griffith reports sixteen cases of infantile scurvy in which the symptoms illustrate the likeness which the title of his article indicates. In all the cases it was evident that a dietetic fault was at work, but just which one was not always clear. He believes that the use of commercial infant foods may have causal relation to the condition in children, and there are cases on record in which sterilized milk seemed to be the cause. He thinks this, however, is overrated; still it is to be considered. The earliest symptom is usually pain in the legs, and disorders of the gums naturally can not be found in children who have no teeth. They may occasionally have scurvy without pain, and failure to make the diagnosis is not to be regarded as a reproach to any physician. The treatment of the disease is simple. The use of fresh fruit juice has worked almost miraculous cures.

7. **Whey Cream.**—White and Ladd summarize the results of their studies on the effect of whey-cream modifications in infant feeding as follows: By the use of whey as a diluent of cream of various strengths they are able to modify the proportion of caseinogen and whey proteids of the cow's milk closely to the proportion of human milk. The best temperature for destroying the rennet enzymes is 65.5 C. Whey or whey mixtures should not be heated above 69.3 C. to avoid coagulation of the whey proteids. The percentage of whey proteids obtained by them was 1 per cent., while in the analysis of the whole milk, approximately three-fourths of the total proteid was caseinogen and one-fourth whey proteid. On the basis of this analysis they were able to obtain whey-cream mixture with a maximum of .9 per cent. and a minimum of .25 per cent. of whey proteid with percentages of caseinogen varying from .25 to 1 per cent., fats from 1 to 4 per cent., milk-sugar from 4 to 7 per cent. The emulsions of fat in whey, barley-water, gravity cream, and centrifugal cream mixtures were the same, both in their macroscopic and microscopic appearances. The combination of heat and transportation which may act together in hot weather, partly destroys the emulsion in all forms of modified milk, but this can be prevented by keeping the mi[illegible] cool during delivery. Whey-cream mixtures yield a much finer, less bulky and more digestible coagulum than plain modified mixture with the same total proteids; the coagulum is equalled in fineness only by that of barley-water mixtures. The coagulum from gravity cream mixture and centrifugal cream mixtures is the same in character.

8. **Proper Methods of Handling Milk.**—Palmer describes the methods in the Gurler farm, at De Kalb, Ill., the results of which seem to be very successful.

9. **Milk Modification.**—Whitridge pleads for instruction, in medical schools, on the methods of modification of milk for prescription feeding. He thinks that especially in the South there is a deficiency in this respect, but more or less in all parts of the country.

11. **Urgent Conditions in the Newborn.**—The conditions mentioned by Wolfe are those of premature births, plural births, pressure on the umbilical cord, on the head, and on the thorax, and toxic states of the fetal blood incident to parturition, as well as certain conditions which seem to be inherent in the germ. He gives directions as to reviving asphyxiated infants, maintaining that the method first adopted should be carried out as far as possible uniformly and the after-treatment of the child be given careful attention. He advises clean lard inunctions over the whole body, afterward rubbed off in the first cleansing of the child, and in the case of a weakened child we should always have enough absorbent cotton on hand to make a cotton envelope for the infant. He calls attention to the necessity of sometimes using stimulants, of which he advocates atropia or nitroglycerin made up from the ordinary hypodermic tablets, a teaspoonful of the solution containing from 1/2000 to 1/3000 of a grain of atropin, while the trinitrin solution should contain a similar fraction of a drop of the 10 per cent. solution. A dose of either may be given and the effects watched, and ordinarily repeated from two to six times in twenty-four hours as a stimulant to circulation and respiration.

12.—See abstract in The Journal, xxxv, p 51.

13. **Mastoid Disease.**—Oppenheimer reviews the symptoms and authorities in mastoid disease and its more serious complications.

14. **Ear Disease in General Medicine.**—The relation of ear disease to various disorders, mumps, influenza, nasal and nasopharyngeal affections, lung disorders, diseases of the alimentary tract, typhoid fever, syphilis, rheumatism, neuritis, cardiac disorders, kidney disease, gastro-intestinal diseases, eye diseases and drugs are all noted

15. **Colic.**—This disorder is an irregular peristalsis of the small intestines, a contraction of the various muscular coats of the intestinal tract accomplished with such violence that the nerve filaments are unduly compressed and pain produced. The causes of infantile colic are enumerated: 1. Flatulence, which may be due to some congenital deformity of the child itself, in its defective development, etc., or it may be the fault of the mother either in her diet or attention to the bowels. Drugs, emotional disorders, etc., on the part of the mother, may have their effect, and it may be due to overfeeding or to improper quality of the food, and sometimes underfeeding may be the cause of colic. Refrigeration, leaving the child lie too long in a wet condition, may be the cause. Illoway does not think swallowing of air has any special effect in this way. It is possible that malarial influence may be at work. The symptoms are discussed in detail, with special reference to the cause, which is an important matter of treatment. For immediate relief the aromatics or carminatives have been employed from time immemorial, and several prescriptions are given. At first, in his early practice, he employed opium, but has found that certain simple remedies were as efficient. He has found nothing superior to milk of asafetida, which is taken readily by most infants and is innocuous. One of the principal things, however, is removal of the cause. When it lies in the infant there is not much to be done except to relieve as far as possible the pain and give attention to the bowels. The diet in the mother and child should be given careful attention.

16. **Speech and Its Defects.**—Makuen discusses the defects of speech due to various causes, to defective hearing and to defective psychic apparatus. In the development of the child attention should be given to this last point, and babbling and prattling should be encouraged in a quiet way. Early examination of the organs of speech should be made whenever there is any sign of defects, and hypertrophied tonsils and all irregularities be looked after. Stammering is not due to arrest of development, but to certain defects of the nervous system. He describes his plan of treatment in these cases. The approximate cause of stammering is a functional derangement of the nervous mechanism of speech causing an incoordinated action of the hitherto automatic peripheral apparatus. There is only one rational way and scientific method of producing normal action, that is physiologic exercise, the patient conscientiously endeavoring to gain control over the entire muscular system with especial attention to those parts immediately concerned with the processes of speech. Some ingenuity may be necessary sometimes to determine just what particular exercise is best suited to each individual case, and great care and perseverence may be needed.

17. **Summer Colds.**—Flick gives his experience and that of his family with summer colds, which he attributes to the use of a swimming bath. There is very little doubt in his mind that the infection was conveyed in this way, directly through the water. He regrets that he was unable to give a bacteriologic study, but at the time his attention was called to the facts and the material was available he had not the opportunity.

18. **Lateral Ventricles.**—Spitzka gives diagrams, taken from life, of the position of the ventricles, with special reference to the surgical procedure of tapping, which he assumes has a future. The diagrams are very instructive. He calls attention to the sources of uncertainty that will have to be taken into account, such as variability in relation to portions of the brain, that is, of the external surfaces of the cranium. The condition differs in different individuals. For the purpose of effecting an entrance into the cavity of the ventricles, the safest road would seem to be the one which is directed into the trigonum, the roomiest part of the ventricle and the least variable. The article is most intelligible in connection with the illustrations.

20. **Milk Sterilization.**—The effects of heat on the bacterial flora of milk are described by Blackader, who sums up his results by saying that milk, in sterilization by heat, is altered to an extent varying according to the elevation and duration of the temperature used. The proteids are modified and rendered apparently less digestible, though our knowledge is yet imperfect in this regard. The combination of saline ingredients is probably more or less broken and the salts assume conditions in which they are less readily absorbed. The natural ferments, whose presence in milk it may be inferred is to assist digestion in the infant's stomach, are destroyed. An alteration takes place in the emulsion, which may also have a distinct effect in lessening the digestibility of cow's milk by the infant. He also points out that it is very important that the milk, after sterilization, must be kept at a low temperature, and this, used for many days, is not free from danger. He therefore thinks it very desirable in infant feeding, to use fresh milk drawn with careful precautions against contamination, and in which the lactic-acid-producing bacteria are present in such small numbers as to induce no important alteration. Such milk had better not be sterilized, but since we can not always obtain it, the lesser of two evils is to have the milk sterilized at the lowest efficient temperature, viz., 60 C. maintained for fifteen minutes.

21. **Gall-Stones.**—Ricketts protests against dependence upon the internal use of drugs and methods of poulticing in cases of pus formations, and favors cholecystotomy with drainage. The latter, through the abdomen and gall-bladder, must be maintained until we are confident that no stones remain in any biliary space that can be explored by a probe. He thoroughly washes out the bladder after removal of the calculi, and frequently finds others brought away. He thinks that if cholecystotomy is the primary operation for removal of the gall-stones, the few cases in which there may be recurrence can be dealt with more successfully by a secondary cholecystotomy if need be, than by any one of the other procedures named for their primary removal. As regards surgical intervention, he objects to two tempo operations, which he thinks are to be condemned.

22. **Appendicitis in Females.**—McRae reports several cases of appendicitis in women, and thinks that the disease is frequently overlooked in the female. Diagnosis is much more difficult. It usually occurs at or about the menstrual time, and is often attributed to genital troubles. The pain of appendicitis, he says, is more sudden in its onset and more acute than that of pelvic disease. It is frequently combined with nausea and vomiting. Muscular spasm is marked; while practically absent in pelvic disease, disturbance is very much greater and progress more rapid. An intact hymen argues strongly for appendicitis. When in doubt and the symptoms are aggressive it is safer to make a diagnosis of appendicitis and operate than to delay until the case is hopeless.

23. **Adenoids.**—The conclusions of Kerrison's article are that pharyngeal adenoids are much more common than generally supposed in children; that cases of moderate development are often not recognized; that growths of moderate size, though not necessarily accompanied by marked symptoms at the time of their development, are often responsible for grave conditions during adolescence or in adult life; that unless removed, in nearly all cases they are accompanied by more or less impairment of hearing; that the presence of adenoids does not greatly add to the gravity of the intercurrent disease and makes the patient more susceptible to tubercular and diphtheric infection; that the *periodic examination in children* for this should become a routine measure; that moderate cases, no less than the extreme ones, demand surgical treatment; that the treatment should aim at complete ablation and removal of the growth and is best done under general anesthesia.

24. **Fatty Degeneration of the Heart.**—According to Satterthwaite, this is a common affection, though it is not to be classed as a disease *sui generis*, but rather as a metamorphosis or process attending on loss of compensation and valvular disease and nearly as often in non-valvular. It is caused by fevers, toxemias, dyscrasias, disorders of nutrition, and mechanical injuries. It may also be a physiologic process, as in senility or after parturition. For practical purposes he divides it into three stages: 1. Early, in which the prognosis is best for a complete recovery. 2. Intermediate, in which the arrest of fatty processes *in toto* is hardly probable, but the affection may be so improved that the patient need not be seriously disabled. In this we may have a physiologic if not a pathologic cure. 3. In the final stage, marked by such profound implication of internal viscera that their functions are in abeyance, the prognosis is always bad and the end will hardly be delayed beyond a few months.

26. **Galveston Storm.**—West gives his experiences and observations in connection with the recent Galveston storm, and notices the unsanitary conditions of overcrowding and filth and general impairment of sanitation that followed the disaster, together with the excessive high temperature, increase of disease-bearing insects and temporary failure of the water-supply. There seems to have been an increase of malaria in the place since the storm, and gastro-intestinal catarrh and dysentery were prevalent for a while. Typhoid fever also made its appearance and scarlet fever, diphtheria, epidemic influenza and dengue occurred, though thus far not epidemic. Many cases of mixed infection were noted. The city is still far from a sanitary condition, as there is no proper system of sewage.

28. **Heart Disease.**—Heffron thinks the treatment of the later stages of heart disease should be guided: 1. By the condition of the heart, that is, when compensation fails, it should be relieved of all extra work, and absolute rest in bed is what he recommends for this purpose. 2. The volume of the blood should be diminished as much as possible, and mainly by the use of such hydragogue cathartics as least disturb the general conditions. The remedies he advocates, in order of their importance, are elaterium, calomel and salines, but at the same time the diminution of ingested fluids must be insisted on. 3. The nervousness of the patient which increases the work of the heart must be controlled. For this he recommends ice-bags for temporary relief, but medicines that act upon the nerve centers have to be relied upon. The alkaloids of opium, codein and morphin are first, and he thinks heroin is a fraud. In some cases where the nervousness is not extreme, he has good results from the use of the abstract of cannabis indica made by the late Dr. William Manlius Smith, which is uniform and efficacious. He uses this first as a rule, often adding the others. The next point is the diet, which must be managed so as to be nutritious, not very bulky, and easily digested. When dropsy comes on he recommends hot-air cabinet baths together with a purgative. The use of cardiac stimulants is also noticed as affecting the muscles of the heart, and also the Schott treatment, and general exercises under the direction of a physician. If compensation can be restored, as it often can, the patient should still be kept under observation and avoid excessive demands on his powers.

32. **Inspection of the Rectum.**—Johnstone describes the instruments, protoscope and anoscope, used in examining the rectum, and the technique of their employment, also a table specially adapted for this purpose. He considers, in conclusion, Houston's valves, noticing particularly Mathews' opinion that they do not exist. He is as certain that they do exist as that the soft palate does, though whether they should be called valves he does not venture to say. In fact, he thinks they are comparable to the soft palate to some extent in efficiency and function.

33. **Some Medical Questions.**—Under the heading, "Some Theories for Which I Should Like to See the Profession Try," Owen notices the lay management of hospitals, which he thinks should give way to medical administration, the discipline of irregular and non-ethical practitioners, etc. He does not think, however, that a physician should be prevented from patenting a valuable medicine or appliance. The principal point is that the physicians should try to obtain control of hospitals and all their details, also of boards of health, and should insist that all men who are allowed to practice medicine should at least be qualified by education. He thinks there should be a branch of the judiciary whose sole function should be the control of public health matters, and all practitioners of medicine should be within that court's jurisdiction.

52. **Brush Massage.**—Fry recommends the use of a dry bristle brush for the purpose of massaging, and claims it has many advantages over the ordinary methods. It is easily learned and can be taught to the ordinary nurse. As he employs it, it consists in kneading all exposed portions of the body with the brush, keeping it in contact with the skin and manipulating with a circumductory and creeping movement with varying rapidity and pressure. The dry brush adheres to the skin, bringing with it the superficial structures in a way that can hardly be described, but can be appreciated on trial. Specially constructed brushes are not necessary. From a good assortment of flesh brushes, one can always select a suitable one for the purpose. He claims that it has an excellent effect on tics, tabes, neuralgia, neurasthenia, hysteric and neurasthenic aches and pains, especially on the neck and back paresthesias.

54. **Uterine Arteriosclerosis.**—This condition has not been much mentioned in English literature though its existence is not questioned. Findley reports several cases and discusses the literature of the subject. He thinks that the finding of arteriosclerosis in the uterine arteries is what should be expected in advanced life and it is not surprising that the clinical picture, pain in the hypogastrium, uterine hemorrhage, anemia and impairment in a woman 70 years of age should be mistaken for carcinoma of the uterus. He thinks that while it must be proven that it is responsible for uncontrollable uterine hemorrhage, there are many cases in which it is overlooked, as in senility; hemorrhagic metritis of the menopause may be in reality hemorrhagic infarction of the uterus based on arteriosclerosis and calcareous degeneration of the uterine vessels. So long as the condition does not rest upon a toxic basis, but rather on senile conditions, the control of the hemorrhage is all that we can expect. If the patient is dependent upon her labor for a livelihood, and the hemorrhages are taking her strength, then vaginal hysterectomy will be indicated. If it is possible for the patient to refrain from

work during hemorrhage, Findley advises rest and the use of ergot, styptics and tamponing. If, however, this is ineffective and the patient's general condition demands it, vaginal hysterectomy must be resorted to.

56.—See abstract in The Journal of January 12, p. 128.

63. **Gastroenterostomy.**—Meriwether discusses the use of the Murphy button in malignant strictures of the pylorus; even in benign strictures the trend of opinion is growing more and more favorable to the use of the button. The saving of time it offers is valuable, and since in suture operations the statistics give the same mortality the button operation should be preferred. The suture operations have usually been performed in selected cases, while the button cases have frequently been in very bad shape. The technique is given in detail. The author advises that the longer half of the button should be used in the stomach; possibly this is not in accordance with others' experience. He advises gastroenterostomy in all cases of malignant disease of the pylorus when the ordinary operation can not be done, even if the patient is weakened and the case far advanced; the Murphy button is to be used in preference to sutures as being equally as good in results and requiring much less time.

64. **Anteflexion.**—Among the causes of anteflexion aside from corsets, overstudy during the period of puberty and other things, Kingman suggests that excessive dancing and bicycle riding are important factors in many cases. The operation he seems to favor is the Dudley, which he has come to use of late with increasing frequency and great satisfaction. He also insists on the importance of cutting the posterior ligaments, which he thinks is a distinct step in advance.

65. **Appendicitis.**—After reporting a series of cases, Currier remarks that two classes in which he would think it wise to avoid surgery are: 1. Those who promise with great certainty to get well, provided they can be watched and operation performed later is necessary. 2. Those in which there is absolutely no hope. In all others operation is advisable. He does not think it well to give up drainage and irrigation where there has been much suppuration nor gauze packing in cases where hemorrhage is likely to occur, though he admits that it may do much damage in its adhesion to tissue. He is firmly convinced that it is good routine practice to open the bowels with calomel twenty-four hours after operation, unless shock is still continuous.

67. **Drum Perforation.**—Spear's article is a protest against the ordinary idea held by many, even in the profession, that perforation or rupture of the drum is necessarily serious in its consequences to hearing, etc. In certain diseases of the middle ear the intact drum is a positive hindrance to cure. While under ordinary circumstances it serves a useful purpose of protection and tends to perfect reproduction of all sounds, in some cases excellent hearing can be secured without it, and in others it is itself a hindrance to hearing, yet perforations or ruptures in it can be made with indifference and its tendency to heal is emphasized.

72. **Middle Ear Tuberculosis.**—The special features of middle ear tuberculosis, according to Bruck, are absence of pain, slight reaction on surrounding parts and its tendency to cause in a short time excessive destruction in the most cases. There are, however, cases where the progress is slower, suppuration diminished, and even spontaneous cure may take place. In some instances the cases simulate an acute purulent otitis media, but in middle ear suppuration no tubercular patient is to be considered as tubercular with absolute certainty until the bacillus can be demonstrated. The prognosis is nearly always bad; complete healing is rare. The general condition of the patient must be looked after and careful local treatment given to the ear. Boiled water douches one to two times daily, followed by loose tamponing with sterilized gauze, are advised. In cases of fetid suppuration, Bruck uses formalin solution, 4 to 6 drops to the quart of luke-warm boiled water. Where the defect in the drum membrane is great, the powder treatment may be employed, the powder containing europhen and boric acid, applied after first syringing and wiping the ear carefully, softening tough masses of secretion with carbo-glycerin, etc. For small granulations absolute alcohol diluted with water, using gradually less until pure alcohol can be used. Larger granulations should be cauterized. Surgical treatment should largely depend on the patient's general condition.

74. **Iodol in Treatment of Tuberculosis.**—Tyson has been using inunctions of iodol for the last two years in cases of consumption, with marked improvement in the symptoms. This was only temporary in advanced cases, though in incipient ones it continued as long as they were under observation. The cough and expectoration sometimes disappeared entirely, or in every case diminished gradually, and the abnormal breathing signs became decidedly diminished in intensity. The weight was increased, expectoration decreased, strength and appetite improved. In addition to the iodol inunctions, the patient received 1/25 gr. of strychnia three times a day, with good nourishing food and proper outdoor exercise. The inunctions contained 20 gr. to an ounce of olive-oil. The quantity rubbed in was ʒi three times daily, increased gradually to ℥ss, say about ʒi a week, and requiring about ten minutes for the patient to rub it on.

83. **Spinal Cocainization.**—Kammerer gives his experience with spinal cocainization, in all 39 cases. Among these there were 10 unsatisfactory results, 6 in which it was impossible to obtain the cerebral fluid by puncture and 4 in which analgesia failed to appear. As regards the causes of failure in the 6 cases, there is no explanation. It is hardly possible that the needle was misdirected; there may have been some peculiar condition existing. As regards dosage, he uses, on an average, 10 or 11 drops of a 2 per cent. solution of cocain, sometimes exceeding this a little. He has seen anesthesia come late, even after thirty or forty minutes, and yet be very complete. In 4 of his cases there was more or less pronounced analgesia of the upper extremities, and in 1 it extended so far over the whole body that the lips, forehead and scalp could be pricked without pain. The patient was a strong, powerful man of 30, and only ¼ grain of cocain was employed. In the great majority, however, analgesia only extended to the ensiform process, and there were no unpleasant by-effects, excepting in a few instances. He concludes that they are more pronounced where the anesthesia is most perfect. They were not observed in the 4 where the analgesia failed. In 2 gastroenterostomies there was a certain amount of discomfort complained of on tension of the abdominal wall and manipulation of the stomach and bowel; in others there was more or less sensibility remaining. He thinks that at present we can only use the method in operations on the lower extremities and the pelvis; the higher we operate the more likely we are to have unpleasant accompaniments and defective analgesia.

85. **Aspirin.**—Toepfer has employed aspirin for its analgesic effects in acute rheumatism and other rheumatic disturbances, measles, malaria, intestinal colic, ovarialgia and other neuralgias, hemicrania, lumbago, sciatica, spinal irritation, arthritis deformans and uterine carcinoma. He finds it more or less effective in these conditions and quite satisfactory in some. It should not be employed with alkalis, like carbonate of soda. It is insoluble and must be given as a dry powder or shaken up in a cold watery mixture with neutral reaction. It is usually only a palliative. Only very rarely did he find any unpleasant effects, such as tinnitus, vertigo and headache, from its use.

87. **Rheumatic Fever in Throat Affections.**—According to Thomson and other authorities, there is a general acceptance of the view that there is an undoubted association between rheumatism and the tonsil, which is expressed from two points of view. One is that the rheumatic poison enters the system through the tonsil, the inflammation of which is the first sign of disease. The other is that tonsillitis in certain cases is one of the manifestations of the rheumatic diathesis. Both of these views are supported by observation. He thinks the various theories that have been propounded are somewhat premature. It is safer to await further pathologic investigation. We also want to know more about rheumatism itself and the

various causes and forms of tonsillitis associated with it. Thus far peritonsillar abscess or quinsy is one form which is not accepted as being rheumatic. The present state of our knowledge in relation to tonsillar affections may be summarized as follows: 1. Undoubtedly a certain number of cases of rheumatism are preceded by angina, a proportion varying from 30 to 80 per cent. Both rheumatism and angina have many etiologic points in common, seasons of wet, cold, fatigue, depression, vitiated air, etc. The connection of angina and rheumatism, though undoubted, is not yet clearly established. The tonsil may be the point of entrance of the rheumatic virus, though showing no indications of being affected. The particular affection of the throat associated with rheumatism is not clear. Peritonsillar inflammation does not seem to be arrested by antirheumatic remedies. Many cases, however, of parenchymatous and lacunar tonsillitis are considerably benefited by salicin and salicylate of soda. It does not follow that this proves the rheumatic nature of the disease. The question requires further research in two directions: 1. In differentiating the various forms of angina and settling the one which is connected with rheumatism. 2. In discovering the true nature of rheumatism itself. The relations of the pharynx and larnyx to rheumatism are also noticed.

88. **Spongyfying of Labyrinth.**—Holinger attempts to show that this condition, associated with gradually "progressive deafness," forms a clinical picture which he thinks is best impressed by the name given above. The diagnosis can be made in the living in a comparatively early stage, from history and the trio of functional tests: 1. Short or negative Rinné. 2. Increase in hearing of low sounds (A) by bone conduction. 3. A large part, one to seven octaves, of the lowest sounds can not be heard by air conduction. 4. The prognosis as to life is good: as to recovery of hearing bad. 5. The treatment must be very judicious. We can judge and compare of its effects in a given disease only when we are able to make an absolute diagnosis. The patients who have been treated from the start are often in a worse condition after years than those who have been left alone.

92.—See abstract in The Journal, xxxv, p. 1425.

102. **Spondylolisthesis.**—This condition, consisting of a sliding of the body of one of the lower lumbar vertebræ, is noticed by Lord, who describes a case which apparently followed typhoid fever. So far as he is aware this has not been before mentioned as a cause of the condition.

103. **Obliterating Hyphema.**—This term seems to Weymann the best suited to describe the condition found in the cases here reported. It applies to contusions, copious enough to obviate all view of either of the anterior chamber or the fundus. The impossibility of intraglobular inspection, puzzling surface signs and complete loss of sight, the absolute necessity of constitutional prognosis and the uniform measures of treatment until clot-absorption, make the subject worthy of some attention. He offers the following deductions: 1. Contusion of the eyeball resulting in obliterating hyphema may, or may not, be complicated with deeper lesions, but uncomplicated cases are in the minority. 2. They are apt to be followed by glaucoma, the chief cause of the suffering. 3. In the absence of infection acute iritis is rare. 4. When the contusing force at the same time secures non-infected drainage from the anterior chamber the immediate reaction, though perhaps very severe, subsides within six to twelve hours, glaucomatous tension not being able to appear. 5. The stippling of the anterior epithelium and the parenchymatous haze are due chiefly to profound shock to the local lymph system, for clouding does not disappear with the reduction of intra ocular pressure. 6. Drawing off the effused blood is neither practicable nor desirable, for it clots in a few moments, and the fibrin binds the clots closely to the iris which tend to narrow the pupil. On the other hand it shuts off the light and serves as an iris splint, but a painless subacute iritis occurs, tending to cause synechiæ. 7. Atropia should always be instilled, not only for dilatation, but on account of its analgesic effect. 8. Glaucomatous tension should be at once relieved by passing a cataract knife into the anterior chamber parallel to the plane of the iris, making a valvular wound which may be made to drain at will. 9. For the inflammation he orders calomel, 6 gr., which has an excellent revulsive effect, and compresses as hot as can be borne, for thirty minutes out of every hour for twenty-four or forty-eight hours. 10. The prognosis should be guarded until the clot absorption is complete. 11. The commonest deeper complications are: luxation of lens, consecutive cataract, iridodialysis, fundus hemorrhage and retinal detachments.

108. **Pulmonary Hemorrhage.**—The treatment of pulmonary hemorrhage, according to Robinson, may be summarized as follows: 1. Relieve the patient's anxiety; unloosen or remove clothing, and place him in a semi-recumbent position. 2. Injection of 1/4 or 1/3 gr. of morphin with 1/120 to 1/60 of atropin. 3. A teaspoonful of common salt, dry on the tongue, or 20 to 60 minims of aromatic sulphuric acid in a small quantity of water may also be given. 4. Order an ice-bag on the chest. 5. If the above fails to check hemorrhage within a short time, cord the extremities, not too tight, but sufficiently to prevent return of venous blood. 6. Under no circumstances give ergot, alum, gallic and tannic acids or any other local astringents. These have no special effect on the lung and irritate the stomach and cause constipation. 7. Insist on absolute mental and physical rest with scanty, nutritious and chiefly a fruit diet, and relieve constipation either by Epsom salts or by enemata. 8. As a prophylaxis against further hemorrhage, have the patient consume large amounts of gelatin prepared in various forms. 9. Mild collapse can be left alone. In severe collapse administer camphor hypodermically and nitroglycerin, also strychnin, not digitalis. Apply hot water bottles to the lower extremities. 10. It sometimes becomes necessary to resort to enteroclysis and large amounts of saline solution or to give the latter subcutaneously or intravenously.

112. **Gastroptosis.**—After describing the conditions, its anatomy, symptoms, etc., Chambers says that the objects sought for in the treatment are: 1. Increase of intra-abdominal tension. 2. To correct any error of secretion or motility. He frequently commences by applying strips of adhesive plaster, which gives relief until the patient is able to obtain an abdominal bandage. This should be fitted carefully so it will press firmly upon the hypogastrium. As a rule it is not needed at night. Before applying it in the morning the intestines are forced up and the bandage laced from below upward. The strength and tone of the abdominal muscles are encouraged by massage, electricity, exercise, deep breathing, etc. The medicinal and dietetic treatment varies. In hyperacidity, acids, alcohol, fruits, etc., should be strictly prohibited. The diet should be nutritious and digestible. Liberal quantities should be given at least four times a day. In severe cases a more strict diet is necessary. The drugs which he has found most useful are those which are sedative to the stomach, and assist in the digestion of starches, correct acidity and relieve constipation. Irritating cathartics should be avoided. Mixtures of bismuth carbonate, extract of cascara sagrada, tincture of belladona and two teaspoonsful of calcined magnesia two hours after meals give good results in many cases. In some cases taka-diastase is useful. A number of cases are reported.

120. **The American Cigaret.**—Seymour maintains that the cigaret deserves its bad name even though it may not be found to contain harmful foreign substances other than tobacco. The toxins of tobacco are developed by combustion and carried directly to the mouth. The material of the cigaret is often refuse tobacco from old cigar stumps, and moistened by the maker's tongue, which may be syphilitic. He concludes that the prepared cigaret is too vile for any defense.

121. **Acute Opium Poisoning.**—Bullard prefers the stomach-tube in this condition, first washing out the stomach with boiled water and then the rectum and bladder. Hypodermic injections of salt solution, he thinks, might be rational, together with bleeding and forced artificial respiration. Atropia, though a functional antidote, must be used with great caution.

and the combination of the two poisons may not improve matters. Ether, camphor, strychnin, caffein, coffee and electricity are all used. Flagellation and rough attempts at rousing the patient are objectionable.

126.—See abstract in The Journal, xxxv, ¶39, p. 1659.

127. **Asthma.**—Dunn reports cases and discusses the etiology of this disease, maintaining the opinion that it is in most cases a reflex from irritation of the nasal mucosa due to retained products of tissue metabolism. This places asthma in the same class of disorders as gout and epilepsy, the difference in the focus of irritation causing the difference in the symptoms.

129. **Perineal Lacerations.**—Brownson finds that perineal tears are often unavoidable, but perineal support is useless and often dangerous. Pressure should be applied directly to the head when it seems to be advancing too rapidly for the safety of the perineum. Pressure on the head by the whole hand and not by the finger tips, with profound anesthesia in most cases, if assistance is at hand, and then if the head can not be delivered readily, slow, gradual and careful delivery by the forceps can be done. Such measures will save at least some of the perinea from laceration.

FOREIGN.

British Medical Journal, January 26.

Summary of Researches on the Propagation of Malaria in British Central Africa. C. W. Daniels.—Malaria prevails all through Central Africa at a height of 5000 feet near the equator, and up to at least 3200 feet at 15 degrees south latitude. It is more prevalent in some districts than in others. The estivo-autumnal is the only parasite that was found alike in Europeans, natives and Indians, with one exception, and in this case it was probably imported. The chief agent in the distribution of malaria in Central and South Africa is Anopheles funestus. Man appears to be the only intermediate host. Native children are generally infected, immunity occurring rather earlier apparently than in some other countries. The percentage of natives with enlarged spleen was decidedly marked between the ages of 2 and 4 years, while in adults this was seldom met with. As regards the prevention of malaria the author lays considerable stress on the value of drainage under proper methods. The habitual protection from mosquitoes would require irksome confinement, as the African Anopheles are less exclusively nocturnal than the Italian for example. Isolation from native settlements here may have some value, but no method is of general application to the exclusion of others. A combination of methods strictly in accordance with local conditions promises the best results. The author thinks the greatest difficulty in exterminating malaria will be to overcome the scepticism on the subject in the tropics, which he himself shared until within the last two years. We have not yet learned all the natural history of malaria-bearing mosquitoes and possibly much help may be obtained from important facts as yet unknown.

Notes on the Life History of "Anopheles Maculipennis" (Meigen). Louis W. Sambon.—This paper, with its illustrations, is a valuable contribution to the natural history of malaria, giving as it does a full account of the life history, so far as known, of Anopheles maculipennis, which the author thinks is identical with the American Anopheles quadrimaculatus and the Italian Anopheles claviger. The species is, therefore, very widely distributed; it seems to have followed man in his migrations and is usually found in connection with habitations. Observations were made on the spreading habits during a recent malarial outbreak at Ostia, in which Dr. Sambon shared. He found that it does not migrate far from its breeding ground, but is often carried by coaches and railway carriages for long distances. During strong winds this species always takes shelter in thick foliage, and there is not much danger of its thus disseminating. The water collections chosen by the Anopheles are not so likely to be dried up as those chosen by the culex, but this may happen in extreme drought. They can live, moreover, in moist ground for several days, and pupæ continue to develop perfectly well even when the mud is dried up entirely. The conditions at Ostia were not favorable for experiments with larvicides. The authors think that more may be hoped from filling up and draining or stocking with fish than from other measures.

Preliminary Note on an Unclassified Type of the West African Fever. S. D. Thompstone, R. A. Bennett and H. E. Annett.—The authors describe a new form of West African fever, generally ushered in by slight rise of temperature, followed by profuse perspiration, and a partial fall of temperature to about 99 degrees. After about a twenty-four hours' period of apyrexia the temperature again begins to rise, at first slowly, but when 105 is passed, with alarming rapidity. It may reach 107 on the second day. For fourteen or even thirty days there is absolutely no tendency for it to fall, the skin acts either very slightly or not at all and all antipyretic drugs fail. The tongue is at first furred on the dorsum and red on the edges, but later it becomes dry and shriveled. There is no enlargement of the liver and spleen. The bowels are regular or loose. The conjunctivæ are injected and pupils contracted. The mind remains reasonably clear in most cases, excepting at the highest temperature; great anxiety and restlessness are constant symptoms in the earliest stages. No plasmodia or pigmented leucocytes have been found in the blood. In two of the later cases the blood tended to coagulate the moment it was exposed to air, and satisfactory films were hard to obtain. The treatment of the condition is summed up in one word—baths. The cold bath is used until the temperature is brought down to 100 or 99 degrees. The patient usually sleeps for about an hour and then feels fairly comfortable, but the temperature usually tends to creep up, and in eighteen or twenty-four hours it is back to its old point. It was found, in one patient who recovered, that after the cold bath the temperature could be kept down by cold packs renewed at hourly intervals. If the patient is to recover, some change for the better is to be looked for at the end of the third week, the temperature falling and keeping down to a certain extent. Convalescence is gradual, and it may be six weeks after the onset before it becomes normal again. About 50 per cent. of the cases terminated fatally. In the addendum to the paper, by Dr. Annett, it is stated that examination of the blood gave nearly the normal number of red corpuscles, over 4,000,000, and there were 15,000 white, with 90 per cent. hemoglobin. No micro-organisms were cultivated. The disorder occurs during the dry season, when malaria is less prevalent. The onset, symptoms and course of the disease are atypical to malaria; no rigors or shivering, hot or cold stages, vomiting or enlarged spleen. The continued hyperpyrexia is characteristic, continuing over a long period, and then gradually declines. The resistance to drugs, absence of hemamebæ and pigmented leucocytes, the especial tendency of the blood to coagulation and its richness in red corpuscles and hemoglobin are also notable characteristics.

The Lancet, January 26.

Suggested Method of Preventing Water-Borne Enteric Fever Amongst Armies in the Field. Louis C. Parkes and Samuel Rideal.—The authors give the results of experiments for destroying the water-borne germ of enteric fever, and the remedy which they seem to find most effective is acid bisulphate of sodium, of which it was found that 1 gram will render a pint of water sterile in fifteen minutes, even if the water contains as many as 50,000 colonies of typhoid bacilli to the centimeter. They recommend the use of it in 5 gr. tabloids, put up in boxes containing about 350, enough to sterilize 100 pints of water. One of these boxes should be carried by every soldier, in his haversack, and supposing him to consume five pints a day, the box would last for three weeks. Instructions should be given by the medical officer to the rank and file, as to the use of the tabloid, especially as to the desirability of allowing it to remain for at least fifteen minutes in solution before the water is consumed. The bacillus typhosus is not by any means resistant to such acids. By this simple means the combating of infection has a future before it, especially under conditions where means of sterilizing by boiling and filtering are not readily available.

Gazette Med. Belge (Liege), January 17.

Technique of Cryoscopy. Bienfait.—About 15 c.c. of the serum or other fluid to be examined are placed in a large test-tube, which is set in a vessel containing salt and chopped ice. The temperature falls to two or three degrees below the freezing point, but the fluid does not freeze—there seems to be a sort of supersaturation by the cold. A minute piece of ice is then dropped into the fluid and at once it freezes solid. The temperature rises to .55 C., where it remains as the normal freezing-point of the serum of the blood. [Waldvogel attributes the higher freezing point for blood serum which he observed in typhoid fever, to the presence in the blood of the typhic antitoxin, mentioned in The Journal, Dec. 22, 1900, p. 1667. He consequently assumes that when the freezing-point is only slightly above normal, it demonstrates a defective production of the antitoxin and an unfavorable prognosis. Ed.]

Presse Medicale (Paris), January 9, 12 and 16.

Importance of Zymases in Infant Feeding. A. B. Marfan.—The presence of a zymase in human milk has been established, and Marfan has also found a lipase and an anaerooxydase. He believes that milk is not an inert fluid, but that it partakes of some of the properties of the tissues. It is possible that the ferments in it have a stimulating and regulating action on the nutrition until the organism has developed sufficiently to supply its own stimulating and regulating substances. Each kind of milk has probably its special ferments, and it may be a mistake to destroy them in sterilizing the milk. The aim in artificial feeding, therefore, should be to add to sterilized cow's milk the zymases peculiar to human milk.

Tests for Sugar in Children.—P. Nobecourt.—Very little information in respect to the functional activity of the intestinal mucosa can be derived from alimentary lactosuria and saccharosuria in children. Alimentary glycosuria, on the contrary, may afford considerable insight into the functional capacity of the liver and tissues. The childish organism in physiologic conditions is able to fix large amounts of glucose—as much as 5.9 gm. per kilogram in some cases.

Revue De Chirurgie (Paris), January.

Ectokelostomy for Hernia. J. Vitrac.—In operating for inguinal hernia, for instance, an incision is made in the abdominal wall above and the mobilized hernia sac is drawn up and out through this second incision. It is then trimmed close to the skin and fastened provisionally. The hernial wound is then sutured and a drain inserted in the marsupialized sac above. When this is removed in a few days the secondary wound is sutured. The chief advantages of this method are its simplicity, rapidity, freedom from danger to the viscera and the possibility of dispensing with general narcosis. The results were most satisfactory in the two cases in which Vitrac has applied it. One patient did not require even local anesthesia.

Obturator Hernia. P. Fredet.—Obturator hernia with a double sac has been noted, the external sac formed of the prevesical fascia. The hernial sac may be arrested in its downward course by a branch of the obturator nerve and may cause pain and symptoms of paralysis by traction on this nerve. These symptoms vanish as the sac emerges from the foramen and leaves the nerve behind it. In some cases the nerve offers such resistance that the hernial sac is diverted from its direct course and lodges behind the external obturator muscle.

Progres Med. (Paris), January 5, 12 and 19.

Latent Epilepsy. Ardin-Delteuil.—This article is concluded from Nos. 50 and 52. It states that the etiology, evolution and prognosis of the latent forms of epilepsy are the same as for the ordinary form, and may blend with the latter. The final dementia even seems hastened in psychic epilepsy, as the thought-cells are used up more rapidly. The prognosis is, therefore, exceptionally grave from this point of view; the mind of the patient is threatened and confinement will become necessary sooner or later. It is also grave from the point of view of society on account of misdemeanors and deeds of violence which may result. Suspicion should be aroused by any motor, sensory, vasomotor, nervous or psychic manifestations of stereotyped reproduction and photographic repetition, sudden, brief, and followed by depression, stupor and forgetfulness. In regard to the psychic phenomena, the violence, publicity, ferocity, marked readiness to take offense and cherish stubborn animosity, are distinctive characteristics. Besides investigating the personal and hereditary record, the toxicity of the urine should be determined as the urine in even the latent forms of epilepsy is usually remarkably hypotoxic in the intervals between the seizures. It should also be examined immediately after an attack, for increased urea and phosphates with a tendency to inversion of the formula. The temperature also, after the latent seizure, will show a slight elevation, with return to normal in a few hours. Mydriasis may also be observed during the seizure with myosis at the end. When latent epilepsy is determined, a medical certificate to that effect should be given the patient, which he should always carry. In regard to the criminal responsibility, the subject is absolutely irresponsible during a seizure, whatever its character and the amnesia, and comparatively irresponsible just before and just after one, according as the pre-epileptic and post-epileptic stage are more or less pathologic. In the intervals there is complete responsibility if the mental faculties are still sound; attenuated if the subject exhibits tokens of the epileptic character. If the mental faculties are affected, the irresponsibility is complete. The degree of responsibility should not be determined from the apparent preservation of the conscience during the psychic paroxysm. Still less is it possible to accept as a criterion of the retention of conscience, the more or less complete retention of memory.

January 19.

Anomaly in the Frontal Sinuses. Suarez de Mendoza.—In the case of a patient operated on for double frontal sinusitis, the inflammation recurred and two supplementary sinuses were found, separated by a thin partition from the true sinuses, but each with its separate passage into the nose. Mendoza has found a similar anomaly on two cadavers. Anger has mentioned this anomaly and Beco has recently reported a similar case.

Calcium Chlorid in Hemorrhagic Variola. Roger.—This article calls attention to the marked benefit derived from the use of calcium chlorid in many cases of hemorrhagic variola. Roger administers it in the following formula: crystallized calcium chlorid, 4 to 6 gm.; syrup of bitter orange peel, 40 gm.; brandy or rum, 30 gm.; tincture of cinnamon, 5 gm.; aq. dest., 50 gm. A tablespoonful is given every hour, supplemented by local hemostatic applications, gelatin, etc. If the hemorrhage is from the intestines they should be flushed with salt solution containing tannin or extract of rhatany.

Centralblatt f. Chir. (Leipsic), January 26.

Substitute for Gastroenterostomy. M. Schmidt.—In case of circumscribed stenosis or spasm of the pylorus, Schmidt suggests, after severing the duodenum from the pylorus, to insert the stump of the duodenum in the stomach, below the closed stump of the pylorus, and suture it to the posterior wall, "end-to-side," maintaining in this way the natural course of the passage, merely moving it a little farther down and farther inside the stomach.

Deutsche Med. Wochenschrift (Leipsic), January 24.

Instruction in the History of Medicine. E. Braatz.—Virchow wrote thirty years ago that the scientific knowledge of young physicians reaches only three to five years back, and this is equally true of the present generation. The history of medicine was taught as a regular branch in fifteen German-speaking universities, a few years ago, but it is kept up now in only two or three. Nevertheless the medical graduate needs the story of the past in order to appreciate the present, to uphold the traditions in professional ethics, and for many other reasons. Braatz pleads that this instruction should not be neglected, and also that more attention should be paid to the things necessary in general practice.

New Form of Hemoglobinuria. L. Michaelis.—In case of extrauterine pregnancy terminating in abortion through the abdominal ostium of the tube, and extensive hemorrhage into the abdominal cavity with severe clinical symptoms, no blood was evacuated through the vagina, and a small retro-uterine hematocele was the only palpable lesion. The patient rapidly recovered. During the absorption of the accumulation of blood, pronounced hemoglobinuria was present on two occasions, once for two and again for four days. Michaelis suggests that possibly the hemoglobin in the extravasated blood was absorbed unaltered into the blood and eliminated through the kidneys, but this phenomenon has never been observed before and is scarcely probable. Still more plausible, he thinks, is the assumption of the formation of a hemolysin by the rapid absorption of the extravasated blood. This hemolysin in turn acted on the blood corpuscles, dissolving them and inducing the hemoglobinemia and hemoglobinuria noted in the case. The formation of the autolysin is followed by the production of an anti-autolysin, as Ehrlich has established, but the latter does not keep pace with the former at first, and more or less hemolysis occurs before the latter is able to counteract the action of the autolysin.

Muenchener Med. Woch., January 8, 15 and 22.

Test for Indican in Urine Containing Iodin. A. Kuehn.—In testing urine for indican, the presence of iodin disturbs the reaction to the test. Kuehn announces that even one drop of a 5 per 1000 solution of sodium thiosulphate will combine the iodin in urine containing 1 per 1000 indican, into a colorless sodium compound.

Atavistic Deformities. G Klein.—In this preliminary communication Klein mentions, as examples of deformities in the female genitalia, which are merely a return to atavistic conditions, uterus bipartitus and double vagina and tubes. Opossums have normally a double uterus, double vagina and double tubes. In the hen, only one of Mueller's ducts develops; the other atrophies, in normal conditions.

January 15.

Subcutaneous Laceration of the Spleen. Jordan.—A case of traumatic, isolated laceration of the spleen is described, the patient, a young officer, who was thrown from his horse and fell on the hilt of his saber. The immediate pain was intense, but there was not much shock. Symptoms of inflammation of the peritoneum followed, and, later, of internal hemorrhage. The pain was localized in the liver region and there was also an area of dulness on the right as well as the left side. But the dulness of the spleen did not change with altered position, and consequently a liver lesion could be excluded. The abdominal wall was retracted and hard. A tear of the mesentery or omentum seldom entails such rapid and profuse hemorrhage as laceration of the spleen. The dulness over the liver, in addition to that in the left flank, indicated hemorrhage, as there is no area of dulness over the liver in case of isolated perforation of the intestine. Vincent could find only six spontaneous recoveries, with 134 deaths from more or less extensive laceration of the spleen. Lewerenz, however, has collected 15 spontaneous recoveries in 135 cases in which the injury to the spleen was the predominant or only serious trauma (*Langenbeck's Archiv* lx, 1900), 16 were saved by extirpation of the organ. The remaining 104 all died; no attempt at surgical intervention was made in 90 cases. Death occurred in less than twenty-four hours in 85 per cent., and in two or three days in 10 per cent., invariably from the hemorrhage or its consequences. The absence of anatomic confirmation of the spontaneous recoveries renders some of them doubtful. These statistics proclaim the necessity of immediate operation to arrest the hemorrhage. The operation of splenectomy has been performed in more than 300 cases besides innumerable experiments on animals, and there is not a single instance known to date in which the extirpation of the organ was in itself the cause of death. On the contrary, even when the blood-producing organs are taxed as after the extensive hemorrhage, the composition of the blood returns to normal in a few weeks or months. In Jordan's personal case the spleen was promptly removed, and two liters of blood were evacuated from the peritoneal cavity. Meteorism, vomiting and atony of the intestines ensued, probably the results of the contusion. Symptoms of circumscribed peritonitis in the vicinity of the stump of the spleen were also observed. Notwithstanding these complications, the patient had completely recovered his health in four months, with the exception of an occasional twinge of pain in the region, possibly caused by some adhesion. Nothing occurred during the entire course of the case which suggested a vicarious activity on the part of any other blood-producing organ. [In Savor's case, described in The Journal xxxii, p. 188, the removal of the spleen did not seem to have an unfavorable influence on the pregnant patient nor on the child delivered normally later. Riegner has recently reported that the patient whose spleen he removed eight years and nine months before, is in good health to date. This was the first case of extirpation of the spleen on account of rupture.—Ed.]

January 22.

Hereditary Transmission of Tuberculosis. E. Klebs.—The transmission of tuberculosis from a tuberculous father is ten times more dangerous for the offspring than from a tuberculous mother. Klebs bases this assertion on his experience and observation, particularly in Switzerland, where there is less shifting of population than in most countries. He tabulates the pathologic tree of two families with 55 descendants in five and six generations. It shows that when both parents were tuberculous, all the children became affected; that 46 per cent. became tuberculous when the father was infected, and that in twenty cases healthy children were raised by tuberculous mothers while only two healthy ones were born to tuberculous fathers. He remarks that if a life insurance company had insured these families—excluding children with tuberculous mothers and accepting those with infected fathers—it would have lost by the transaction. Tubercular peritonitis or nephritis was usually the first manifestation of infection in the children of tuberculous fathers, while the lungs and cervical ganglia were usually primarily affected in the children of infected mothers. The route of the infection in the latter case is probably through the lymphatic gland situated behind the sternoclavicular articulation, as Grober has established that stains injected into the tonsils pass not only into the cervical lymphatics, but also into the pleura and the apex of the lung. Tubercular infection of the apex is probably derived in many, if not in most, cases from infected glands in the neck and not from inhalation into the lungs. The percentage of descendants in the two families who died early or childless was 71.8. Only 28.2 per cent. had more than one child, and many of these were tuberculous.

Alcohol Vapor for Disinfection. G. Frank.—Anthrax spores exposed, between sheets of filtering paper, to the vapor of boiling 40 per cent. alcohol were invariably killed in five minutes in Frank's numerous tests. Steam alone and alcohol vapor alone are ineffectual. The bactericidal power is due to the combination of 90 per cent. alcohol and 12 per cent. water which pass off in the steam and vapor when 40 per cent. alcohol is boiled.

Condition of the Blood-Forming Organs in Anemia. C. S. Engel.—As the results of his researches, Engel concludes that it is possible to determine the condition of the bone-marrow in anemia from examination of the blood. He distinguishes four phases of the marrow: "normal, insufficient, metaplastic and aplastic." The normal red bone-marrow in the epiphyses contains orthochromatic and polychromatic normoblasts. The blood shows only one kind of red corpuscle, normal orthochromatic erythrocytes. In case of "insufficient" bone-marrow, the size and shape of the red corpuscles are the same as in normal conditions, but sometimes the nucleated reds in the bone-marrow are increased, as in case of pernicious anemia, in which metaplastic cells are observed in the marrow. The blood may be characteristic of chlorosis or of anemia, or pathologic reds may pass into the blood, normal in size, but such as remain in the marrow under normal conditions, orthochromatic and polychromatic normoblasts and polychromatic erythrocytes. In metaplastic marrow the yellow portion is entirely or partially red. Megaloblasts and metrocytes are found in the marrow, such as are noted in the earliest embryonal stages in the blood of the heart and liver, before any bone-marrow has developed. The cells of metaplastic bone-marrow are therefore identical with the blood cells of the premedullary period of blood formation, and show all the transitions from normal size to pathologically large red corpuscles with and without a nucleus. Megaloblasts are found frequently and macrocytes regularly in the blood. In the rare condition which he calls "aplastic" bone-marrow, no nucleated reds nor leucocytes are found. The red marrow of the epiphyses has become transformed into fatty marrow and ceases to be a hematopoietic organ. No pathologic cells are found in the blood; the normal red corpuscles diminish without being substituted by others. Even granulated leucocytes are absent. Engel urges, in conclusion, microscopic examination of the red marrow at every autopsy as a routine measure.

Evacuation of Abscesses in Retrovesical Pouch Through a Parasacral Incision. K. Port.—Rotter recommends the rectal route for opening abscesses in the rectovesical pouch, but Port is convinced that a much simpler and safer way is that described by C. Koch (*Muench. Med. Woch.*, 1899, 1.) He had occasion to perform this operation recently and found it extremely satisfactory. The broad, funnel-shaped, parasacral opening afforded ample view of the conditions in the region. The incision was carried around the left of the anus to the apex of the coccyx and along its left margin. The coccyx was then turned back. The dressings were changed with the patient in the knee-elbow position. The abscess was consecutive to appendicitis, and after a necrotic fragment of tissue, possibly the appendix, had been expelled the wound rapidly healed. There was considerable pain during the first day or so from the luxated coccyx, but it soon subsided. As the pus has such a free outlet there is no fear of infiltration of adjacent tissues.

Perforation of Hydatid Cysts Into Lungs. S. Zervos.—In six cases of hydatid cysts perforating into the lungs, Zervos found the cysts in the upper surface of the liver. The French method of treating hydatid cysts by capitonage is not only ineffectual, but it exposes the patient to the greatest dangers. The cysts form again and as the hermetic suturing of the liver prevents them from developing forward and downward, they can only grow upward. This, in time, leads to perforation into the lung and death from immediate asphyxia or from pneumonia later.

Grece Medicale (Syra), December.

Malaria and Antirabic Treatment. Pampoukis.—At the Pasteur Institute in Athens it has been noted that a malarial chill and fever frequently follow the antirabic injection in patients who have previously suffered from malaria, but have had no attacks for a year or more.

Hematoblasts in the Omentum. Melissinos.—Hematoblasts such as are found in the other blood-producing organs have been discovered by Melissinos in the great omentum of cats, dogs, pigs and man during the embryonal stage. They are most numerous in that portion of the omentum between the spleen and the greater curvature. The great omentum and the spleen are both derived from the posterior mesogastrium, and as similar hematoblasts are found in each, this fact may throw some light on the origin of hematoblasts in general.

Gazetta Degli Ospedali (Milan), January 6, 13 and 20.

Physiology of the Cerebrospinal Fluid. Cavazzani.—The alkalinity of the cerebrospinal fluid was less than half that of the blood in a series of tests on dogs and cattle. The animals were under the influence of curare or morphin in some of the tests; in others the fluid was aspirated through the atlanto-occipital membrane or obtained post-mortem, and in another series of experiments, acids and alkalies were injected. The results all tend to demonstrate the existence in the nerve-centers of an acid substance resulting from their functional activity. Cavazzani also announces that he has succeeded in precipitating a substance from the cerebrospinal fluid which behaves like a ferment, an oxydase. Further researches indicated that the variations in pressure are due to the venous circulation. He noticed that at the commencement of asphyxia the pressure was diminished and the fluid ceased to flow from the fistula, followed soon by an increased flow. He also observed that the flow subsided in dogs on stimulation of the central stump of the vago-sympathetic nerve.

January 13.

Regeneration of Nerve Fibers. A Stefani.—This work won the prize offered by the Royal Institute of Lombardy. The researches therein detailed confirm the assumption that nerve fibers possess the property of maintaining the isolation of the central stumps as long as they remain normal. On the other hand, if one of the fibers or of the disconnected centers is in course of degeneration, union between the fibers may occur. The facts observed corroborate the conception of the neuron as an elementary organism with the property of keeping itself distinct from all other elementary organisms of the same species and of regenerating a lost part.

January 20.

Surgical Intervention in Bubonic Plague. Bandi.—The benefits of excising the buboes in oriental plague were proclaimed by Terni during his experiences in Brazil. Bandi has been conducting a long series of experiments in this line at Messina, and announces that the results completely confirm Terni's statements. He considers bubonic plague essentially and exclusively an affection of the lymphatic system. The bacillus settles in the gland first invaded and remains there for a time. Before the suppurative stage has been reached the bacilli start on their invading progress, passing into adjacent glands, but without penetrating the capsular filter of the glands. The infection in his experiments always proceeded to the superficial glands before invading those that lay deeper. Prompt, aggressive extirpation of the primary foci is indicated. The bacilli do not pass into the blood except as a septicemic process in extremely severe cases, or when the resistance of the organism has been overcome. Salomoni states that he has removed tumefied glands as a local curative and general prophylactic measure in tuberculosis. He has systematically removed all the inguino-crural and pelvic glands in fourteen cases. He has also proved on the cadaver the feasibility of the enucleation of the peribronchial lymphatic glands.

Klinitchesky Journal (Moscow), November.

Two Cases of Cortical Epilepsy Treated by Operation. M. A. Luntz.—Both of the patients were women, one a cook, 53, and the other 22 years of age. There was no history nor indication of syphilis or trauma in either case; the typical cortical epilepsy was recent and the absence of general symptoms and other signs excluded the idea of a tumor. The epilepsy in the older woman had commenced after a very severe cold which had left great weakness; the seizures recurred at intervals of two or three weeks and sometimes for two or three days in succession. Luntz was able to diagnose positively the site of the lesion in the upper part of the central convolutions, but the alterations found at the spot were comparatively insignificant, merely a thickening of the dura mater and slight adhesions between the membranes, bone and brain. The lesion was evidently, he considers, a relic of an organic process, in all probability tubercular. Although none of the organs showed tubercular involvement, the patient had had, twenty-eight years before, an obstinate suppurating lesion in the left shoulder, which persisted for five years and left a deep defect. After craniectomy, in July, 1899, the slight paresis of the lower extremity persisted unchanged, but the seizures did not recur during the three months the patient was under observation. In the second case the operation proved a failure, as the seizures were uninfluenced. The lesion in this case was located in the lower and partly in the middle parts of the central convolutions. In the review of the current Russian periodicals, which is a new feature of this journal, another case of cortical epilepsy is described by Vassilieff, of fifteen years' standing, the epileptic and later the paralytic symptoms being limited to the left side. The patient died of intercurrent pneumonia, and a dark-red focus the size of a pea was found in the depths of the right fissure of Rolando. During the epileptic seizures in this case, the patient invariably lost consciousness if he were turned on his back.

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J. J. Ratcliffe, Waukon, to Spilville, Iowa.

S. [illegible] 22 W. 7th St., Cincinnati, Ohio.

R. [illegible] 853, Knoxville, Tenn.

Br[illegible] St., to 6 Prospect Ave., Milwaukee, Wis.

W. F. Seymour, Chicago, to Tengchowfoo, Shantung Prov., via Chefoo, China.

W. F. Sihler, Grand Harbor, to Devil's Lake, N. D.

J. O. Strickland, Atlanta, to Stilson, Ga.

C. H. Stoddard, 1201 State, to 1201 Vliet St., Milwaukee, Wis.

W. E. Shook, 740 Jackson Boul., to 588 Congress St., Chicago.

S. L. Stevens, 722 Jackson Boul., to 212 S. Lincoln St., Chicago.

R. B. Sweet, 775 Polk St., to 119 Seeley Ave., Chicago.

N. M. Spradley, Selvin, to Tennyson, Ind.

Percy Shields, 22 W 7th St., to 5 Garfield Pl., Cincinnati, Ohio.

W. D. Shields, Holdrege, to Insane Hospt., Lincoln, Neb.

A. L. Sherman, Hudson St. Hospt., to New York Hospt., New York City.

R. T. Strange, Memphis, Tenn., to Vandervoort, Ark.

E. J. Thayer, Yoakum, Tex., to 1645 Welton St., Denver, Colo.

N. K. Vance, Baton Rouge, to Shreveport, La.

J. M. Womeldorf, Hartley, to Schleswig, Iowa.

John Wehrly, St. Louis, Mo., to San Bernardino, Cal.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Jan. 24, to 30, 1901, inclusive:

Dallas Bache, colonel, asst.-surgeon-general U. S. A., president of a promotion board convened at the War Department, Washington, D. C.

Joseph L. Bell, acting asst.-surgeon, from Richmond, Ind., to duty at Fort Crook, Neb.

W. Fitzhugh Carter, major and surgeon, U. S. A., member of a board at Fort Totten, N. Y., to examine officers of the corps of engineers for promotion.

William D. Crosby, captain and asst.-surgeon, U. S. A., member of a board in New York City, to examine officers of the Ordnance Department.

Lawrence A. Felder, acting asst.-surgeon, member of a board at Mobile, Ala., to examine officers of the corps of engineers.

Alfred C. Girard, lieut.-col., deputy surgeon-general, U. S. A., member of a board at San Francisco, Cal., to examine officers of the corps of engineers.

Louis T. Hess, lieutenant and asst.-surgeon, U. S. A., now on temporary duty at the general hospital, Presidio of San Francisco, Cal., is relieved from further duty in the Division of the Philippines.

John Van R. Hoff, major and surgeon, U. S. A., member of a promotion board at the War Department, relieving Colonel Dallas Bache, asst.-surgeon-general.

Deane C. Howard, captain and asst.-surgeon, U. S. A., former orders from Fort Hancock, N. J., to the Division of the Philippines revoked.

Henry S. Kilbourne, major and surgeon, U. S. A., member of a board in New York City, to examine officers of the Ordnance Department.

Thomas J. Kirkpatrick, captain and asst.-surgeon, U. S. A., member of a board at Mobile, Ala., to examine officers of the corps of engineers.

Louis A. LaGarde, major and surgeon, U. S. A., member of a promotion board at the War Department, relieving Lieut.-Col. Charles Smart, deputy surgeon-general.

William C. LeCompte, acting asst.-surgeon, from Washington, D. C., to duty at Fort Du Pont, Del.

Thomas K. Mullins, acting asst.-surgeon, leave of absence granted.

George Newlove, acting asst.-surgeon, former orders modified so as to assign him to temporary duty at Fort Sill, Okla.

Robert M. O'Reilly, lieut.-col., deputy surgeon-general, U. S. A., member of a board at Fort Monroe, Va.; to examine officers of the army.

Adrian S. Polhemus, captain and asst.-surgeon, U. S. A., now on duty at Fort Leavenworth, Kan., to proceed to Fort Riley, Kan., for temporary duty, and as a member of a promotion board.

Benjamin F. Pope, lieut.-col., deputy surgeon-general U. S. A. member of a board at San Francisco Cal., to examine officers of the corps of engineers for promotion.

Irving W. Rand, captain and asst.-surgeon, U. S. A., former orders assigning him to Fort Hancock, N. J., from the Division of the Philippines revoked.

Charles Smart, lieut.-col., deputy surgeon-general, U. S. A., member of a promotion board at the War Department, Washington, D. C.

James K. Stockard, acting asst.-surgeon, now in San Francisco, Cal., is assigned to duty in the Department of California.

Blair D. Taylor, major and surgeon, U. S. A., member of a board at Honolulu, H. I., to examine candidates for admission into the U. S. Military Academy, West Point, N. Y.

Adrian D. Williams, acting asst.-surgeon, from Brooklyn, N. Y., to temporary duty at Fort Adams, R. I.

Roy A. Wilson, acting asst.-surgeon, member of a board at Fort Totten, N. Y., to examine officers of the corps of engineers for promotion.

Navy Changes.

Changes in the Medical Corps of the navy for the week ending Feb. 2, 1901:

Medical Inspector W. A. McClurg, commissioned medical inspector, Nov. 19, 1900:

Asst.-Surgeon H. C. Shiffert, ordered to the *Franklin*.

Asst.-Surgeon E. J. Grow, detached from the *Culgoa*, and ordered to the *Glacier*, and also to duty at Olongape, P. I.

Pharmacist J. Cowan, detached from the *Culgoa*, and ordered to the *Glacier*, and also to duty at the Naval Hospital, Cavite.

P. A. Surgeon M. R. Pigott, died at Annapolis, Md., January 31, 1901.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioner officers of the U. S. Marine-Hospital Service for the seven days ended Jan. 31, 1901:

Surgeon W. P. McIntosh, to proceed to Jeffersonville, Ga., for special temporary duty, Jan. 30, 1901.

Surgeon T. B. Perry, granted leave of absence for thirty days from Feb. 11.

Asst.-Surgeon John McMullen, upon expiration of leave of absence, to proceed to Wilmington, N. C., and assume temporary command of the service during the absence of Surgeon T. B. Perry.

Asst.-Surgeon G. M. Corput, to proceed to Cleveland, Ohio, and assume temporary command of the service during the absence of Surgeon W. J. Pettus.

BOARD CONVENED.

Board convened to meet at Washington, D. C., on Tuesday, Feb. 5, 1901, for the physical examination of Second Asst.-Engineer R. F. Halpin, R. C. S. Detail for the board—Surgeon Preston H. Bailhache, Chairman; Surgeon G. T. Vaughan, and Asst.-Surgeon B. S. Warren, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 2, 1901:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Jan. 19-26, 2 cases
Florida: Jacksonville, Jan. 12-26, 10 cases.
Illinois: Chicago, Jan. 19-26, 25 cases, 1 death.
Indiana: Michigan City, Jan. 20-27, 1 case.
Kansas: Wichita, Jan. 19-26, 9 cases.
Kentucky: Lexington, Jan. 19-26, 2 cases.
Louisiana; Jan. 19-26, Shreveport, 5 cases; New Orleans, 11 cases, 3 deaths.
Maryland: Baltimore, Jan. 19-26, 1 case.
Pennsylvania: Jan. 19-26, Erie, 1 case: Pittsburg, 2 cases.
Tennessee: Jan. 19-26, Memphis, 8 cases; Nashville, 4 cases.
Texas: Houston, Jan. 19-26, 44 cases, 1 death.
Utah: Salt Lake City, Jan. 19-26, 31 cases.
Wisconsin: Milwaukee, Jan. 19-26, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Dec. 29-Jan. 5, 1 case.
Brazil: Pernambuco, Nov. 15-30, 30 deaths.
China: Hongkong, Dec. 8-15, 1 case.
Egypt: Alexandria, Dec. 24-31, 2 cases, 1 death.
England: Jan. 5-12, London, 1 case; Newcastle, on Tyne, 2 cases.
France: Paris, Jan. 5-12, 11 deaths.
India: Bombay, Dec. 24-Jan. 1, 4 deaths.
Mexico: Mexico, Jan. 13-20, 1 case; Tuxpan, Jan. 14-21, 1 death; Vera Cruz, Jan. 6-13, 3 cases.
Russia: Moscow, Dec. 22-Jan. 5, 9 cases, 4 deaths; Odessa, Dec. 22-Jan. 12, 137 cases, 24 deaths; St. Petersburg, Dec. 22-Jan. 5, 6 cases 2 deaths; Warsaw, Dec. 22-Jan. 5, 23 deaths.
Scotland: Glasgow, Jan. 11-18, 121 cases, 2 deaths.

YELLOW FEVER.

Cuba: Havana, Jan. 12-19, 2 deaths.
Mexico: Vera Cruz, Jan. 6-20, 5 cases.

CHOLERA.

India: Bombay, Dec. 24-Jan. 1, 2 deaths.
Straits Settlements: Singapore, Nov. 16-27, 36 cases, 36 deaths.

PLAGUE.

India: Bombay, Dec. 24-Jan. 1, 154 deaths.
Turkey: Constantinople, Jan. 7, 1 death.

The Journal of the American Medical Association

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Original Articles.

THE BACTERIAL TOXINS.*

VICTOR C. VAUGHAN, M.D., AND THOMAS B. COOLEY, M.D.

ANN ARBOR, MICH.

Our object in presenting this paper is merely to outline the theory of the nature and action of the bacterial toxins which we are endeavoring to demonstrate, and to describe our method of work and the results which we have reached through the experiments we have so far made, which are very incomplete and really only a beginning toward the thorough working out of the subject.

We have been led by observation of many facts concerning the pathogenic bacteria and their action in the various infectious diseases, their resistance to heat, to disinfectants and stains, etc., and by the results of some investigations carried on by others and by ourselves with certain species of these organisms to formulate a theory which we believe to be in some respects new, and which may be stated as follows: The specific poisons of the pathogenic bacteria are formed within the bacterial cells, and constitute a part of the organism itself. As we shall mention later, this idea has been held by others, notably by Buchner and by Pfeiffer. Bacteria probably consist of cell membranes with contents in which the poison exists. In at least some of the pathogenic bacteria the toxin does not appear to be an essential part of the cell. We mean by this that some of the pathogenic bacteria may retain their vitality and still not manifest their pathogenic properties. This is well illustrated by de Schweinitz and others in their studies of the tubercle bacillus.

The pathogenic properties of a given bacterium are dependent on the poisonous character of the cell contents and the readiness with which the content is diffused through the cell wall, and this diffusibility is dependent on the solubility of the toxin and the permeability of the cell wall.

An increase or decrease in the virulence of a given bacterium can be explained in only one of two ways. The first possibility is that it is due to a chemical change in the toxin itself. This seems to us highly improbable. The second possibility is that heightened virulence is due to an increase in the amount of the toxin formed within the cell or to a greater permeability of the cell wall, one or both. The third possibility, that increased virulence may be due to more rapid cell proliferation, we reject as a rule, because it is well known that from some cultures of the diphtheria bacillus a more active toxin may be obtained than from other cultures in which there is more abundant cell growth. The relative proportion of cell membrane and toxin content is probably a variable one. It is furthermore probable that with increased cell content the cell wall becomes both thinner and more permeable.

It is probable that the toxins of the different pathogenic bacteria belong chemically to the same group of bodies and that they are proteid in character. Apparently these toxins vary in stability of constitution. This is indicated by the difference in the effect of heat upon them. As we shall show, the toxin of the colon bacillus may be heated with water in a sealed tube, to 184 degrees for one-half hour without decrease in virulence while the cells of the diphtheria bacillus become inert after prolonged exposure to a temperature of 60 degrees. That the cell walls differ in the readiness with which their toxin contents diffuse through them seems evident from the way in which diphtheria and tetanus bacilli induce intoxications while their growth is confined to a very limited area, as compared with the relative innocuousness of the colon bacillus growing abundantly in the intestines, and at the same time containing a highly active toxin.

This theory will require a long series of observations of the characteristics and action of many bacteria before its truth or falsity can be determined, but we believe that we have in the investigations we have carried on during the past few months established, in regard to the bacillus, the bacterium coli commune, certain facts which have an important bearing on the question, and which we hope may lead us in time toward further light on the chemistry of the bacterial toxins; and we feel sure that only when we have light on the chemistry of these toxins will the nature and action of the antitoxins be understood.

The literature of bacteriology and hygiene gives little information concerning our subject. A thorough examination of the publications within our reach shows that although a vast amount of work has been expended on the isolation and identification of some of the bacterial toxins, the progress made has been slow. In fact, it may safely be said that in no case has the chemical nature of the essential toxin of any of the pathogenic bacteria been shown. In the case of the group with which we are at present working, that of the colon bacilli, almost nothing of any real importance has been done toward showing the nature of their toxin; and investigations with any of the pathogenic bacteria along the line in which we are working, namely, the isolation and indentification of a poison which is an essential part of the cell content, aside from any poison which may or may not be dissolved in the medium surrounding the cell, are very rare.

A few communications are, however, worthy of especial notice. Two prominent observers have emphatically stated their belief in bacterial toxins which are an essential part of the bacteria themselves—Buchner in regard to the pathogenic organisms in general, and

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*Presented to the Section on Pathology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

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S. Rothenberg, 639 W. 8th, to 22 W. 7th St., Cincinnati, Ohio.

R. Russell, Sunbright, to Box 853, Knoxville, Tenn.

Bryant Smith, 136 Wisconsin St., to 6 Prospect Ave., Milwaukee, Wis.

W. F. Seymour, Chicago, to Tengchowfoo, Shantung Prov., via Chefoo, China.

W. F. Sihler, Grand Harbor, to Devil's Lake, N. D.

J. O. Strickland, Atlanta, to Stilson, Ga.

C. H. Stoddard, 1201 State, to 1201 Vliet St., Milwaukee, Wis.

W. E. Shook, 740 Jackson Boul., to 588 Congress St., Chicago.

S. L. Stevens, 722 Jackson Boul., to 212 S. Lincoln St., Chicago.

R. B. Sweet, 775 Polk St., to 119 Seeley Ave., Chicago.

N. M. Spradley, Selvin, to Tennyson, Ind.

Percy Shields, 22 W 7th St., to 5 Garfield Pl., Cincinnati, Ohio.

W. D. Shields, Holdrege, to Insane Hospt., Lincoln, Neb.

A. L. Sherman, Hudson St. Hospt., to New York Hospt., New York City.

R. T. [illegible] Tenn., to Vandervoort, Ark.

E. J. [illegible] to 1645 Welton St., Denver, Colo.

N. K. [illegible] to Shreveport, La.

J. M. [illegible] to Schleswig, Iowa.

John Wehrly, St. Louis, Mo., to San Bernardino, Cal.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Jan. 24, to 30, 1901, inclusive:

Dallas Bache, colonel, asst.-surgeon-general U. S. A., president of a promotion board convened at the War Department, Washington, D. C.

Joseph L. Bell, acting asst.-surgeon, from Richmond, Ind., to duty at Fort Crook, Neb.

W. Fitzhugh Carter, major and surgeon, U. S. A., member of a board at Fort Totten, N. Y., to examine officers of the corps of engineers for promotion.

William D. Crosby, captain and asst.-surgeon, U. S. A., member of a board in New York City, to examine officers of the Ordnance Department.

Lawrence A. Felder, acting asst.-surgeon, member of a board at Mobile, Ala., to examine officers of the corps of engineers.

Alfred C. Girard, lieut.-col., deputy surgeon-general, U. S. A., member of a board at San Francisco, Cal., to examine officers of the corps of engineers.

Louis T. Hess, lieutenant and asst.-surgeon, U. S. A., now on temporary duty at the general hospital, Presidio of San Francisco, Cal., is relieved from further duty in the Division of the Philippines.

John Van R. Hoff, major and surgeon, U. S. A., member of a promotion board at the War Department, relieving Colonel Dallas Bache, asst.-surgeon-general.

Deane C. Howard, captain and asst.-surgeon, U. S. A., former orders from Fort Hancock, N. J., to the Division of the Philippines revoked.

Henry S. Kilbourne, major and surgeon, U. S. A., member of a board in New York City, to examine officers of the Ordnance Department.

Thomas J. Kirkpatrick, captain and asst.-surgeon, U. S. A., member of a board at Mobile, Ala., to examine officers of the corps of engineers.

Louis A. LaGarde, major and surgeon, U. S. A., member of a promotion board at the War Department, relieving Lieut.-Col. Charles Smart, deputy surgeon-general.

William C. LeCompte, acting asst.-surgeon, from Washington, D. C., to duty at Fort Du Pont, Del.

Thomas K. Mullins, acting asst.-surgeon, leave of absence granted.

George Newlove, acting asst.-surgeon, former orders modified so as to assign him to temporary duty at Fort Sill, Okla.

Robert M. O'Reilly, lieut.-col., deputy surgeon-general, U. S. A., member of a board at Fort Monroe, Va., to examine officers of the army.

Adrian S. Polhemus, captain and asst.-surgeon, U. S. A., now on duty at Fort Leavenworth, Kan., to proceed to Fort Riley, Kan., for temporary duty, and as a member of a promotion board.

Benjamin F. Pope, lieut.-col., deputy surgeon-general U. S. A. member of a board at San Francisco Cal., to examine officers of the corps of engineers for promotion.

Irving W. Rand, captain and asst.-surgeon, U. S. A., former orders assigning him to Fort Hancock, N. J., from the Division of the Philippines revoked.

Charles Smart, lieut.-col., deputy surgeon-general, U. S. A., member of a promotion board at the War Department, Washington, D. C.

James K. Stockard, acting asst.-surgeon, now in San Francisco, Cal., is assigned to duty in the Department of California.

Blair D. Taylor, major and surgeon, U. S. A., member of a board at Honolulu, H. I., to examine candidates for admission into the U. S. Military Academy, West Point, N. Y.

Adrian D. Williams, acting asst.-surgeon, from Brooklyn, N. Y., to temporary duty at Fort Adams, R. I.

Roy A. Wilson, acting asst.-surgeon, member of a board at For Totten, N. Y., to examine officers of the corps of engineers for promotion.

Navy Changes.

Changes in the Medical Corps of the navy for the week ending Feb. 2, 1901:

Medical Inspector W. A. McClurg, commissioned medical inspector, Nov. 19, 1900:

Asst.-Surgeon H. C. Shiffert, ordered to the *Franklin*.

Asst.-Surgeon E. J. Grow, detached from the *Culgoa*, and ordered to the *Glacier*, and also to duty at Olongape, P. I.

Pharmacist J. Cowan, detached from the *Culgoa*, and ordered to the *Glacier*, and also to duty at the Naval Hospital, Cavite.

P. A. Surgeon M. R. Pigott, died at Annapolis, Md., January 31, 1901.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioner officers of the U. S. Marine-Hospital Service for the seven days ended Jan. 31, 1901:

Surgeon W. P. McIntosh, to proceed to Jeffersonville, Ga., for special temporary duty, Jan. 30, 1901.

Surgeon T. B. Perry, granted leave of absence for thirty days from Feb. 11.

Asst.-Surgeon John McMullen, upon expiration of leave of absence, to proceed to Wilmington, N. C., and assume temporary command of the service during the absence of Surgeon T. B. Perry.

Asst.-Surgeon G. M. Corput, to proceed to Cleveland, Ohio, and assume temporary command of the service during the absence of Surgeon W. J. Pettus.

BOARD CONVENED.

Board convened to meet at Washington, D. C., on Tuesday, Feb. 5, 1901, for the physical examination of Second Asst.-Engineer R. F. Halpin, R. C. S. Detail for the board—Surgeon Preston H. Bailhache, Chairman; Surgeon G. T. Vaughan, and Asst.-Surgeon B. S. Warren, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 2, 1901:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Jan. 19-26, 2 cases

Florida: Jacksonville, Jan. 12-26, 10 cases.

Illinois: Chicago, Jan. 19-26, 25 cases, 1 death.

Indiana: Michigan City, Jan. 20-27, 1 case.

Kansas: Wichita, Jan. 19-26, 9 cases.

Kentucky: Lexington, Jan. 19-26, 2 cases.

Louisiana; Jan. 19-26, Shreveport, 5 cases; New Orleans, 11 cases, 3 deaths.

Maryland: Baltimore, Jan. 19-26, 1 case.

Pennsylvania: Jan. 19-26, Erie, 1 case: Pittsburg, 2 cases.

Tennessee: Jan. 19-26, Memphis, 8 cases: Nashville, 4 cases.

[illegible] 19-26, 44 cases, 1 death.

[illegible] Jan. 19-26, 31 cases.

[illegible] Jan. 19-26, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Dec. 29-Jan. 5, 1 case.

Brazil: [illegible]-30, 30 deaths.

China: [illegible] 1 case.

Egypt: [illegible] 1, 2 cases, 1 death.

England: [illegible] 1 case; Newcastle, on Tyne, 2 cases.

France: Paris, Jan. 5-12, 11 deaths.

India: Bombay, Dec. 24-Jan. 1, 4 deaths.

Mexico: Mexico, Jan. 13-20, 1 case; Tuxpan, Jan. 14-21, 1 death: Vera Cruz, Jan. 6-13, 3 cases.

Russia: Moscow, Dec. 22-Jan. 5, 9 cases, 4 deaths; Odessa, Dec. 22-Jan. 12, 137 cases, 24 deaths: St. Petersburg, Dec. 22-Jan. 5, 6 cases 2 deaths; Warsaw, Dec. 22-Jan. 5, 23 deaths.

Scotland: Glasgow, Jan. 11-18, 121 cases, 2 deaths.

YELLOW FEVER.

Cuba: Havana, Jan. 12-19, 2 deaths.

Mexico: Vera Cruz, Jan. 6-20, 5 cases.

CHOLERA.

India: Bombay, Dec. 24-Jan. 1, 2 deaths.

Straits Settlements: Singapore, Nov. 16-27, 36 cases, 36 deaths.

PLAGUE.

India: Bombay, Dec. 24-Jan. 1, 154 deaths.

Turkey: Constantinople, Jan. 7, 1 death.

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Original Articles.

THE BACTERIAL TOXINS.*

VICTOR C. VAUGHAN, M.D., and THOMAS B. COOLEY, M.D.
ANN ARBOR, MICH.

Our object in presenting this paper is merely to outline the theory of the nature and action of the bacterial toxins which we are endeavoring to demonstrate, and to describe our method of work and the results which we have reached through the experiments we have so far made, which are very incomplete and really only a beginning toward the thorough working out of the subject.

We have been led by observation of many facts concerning the pathogenic bacteria and their action in the various infectious diseases, their resistance to heat, to disinfectants and stains, etc., and by the results of some investigations carried on by others and by ourselves with certain species of these organisms to formulate a theory which we believe to be in some respects new, and which may be stated as follows: The specific poisons of the pathogenic bacteria are formed within the bacterial cells, and constitute a part of the organism itself. As we shall mention later, this idea has been held by others, notably by Buchner and by Pfeiffer. Bacteria probably consist of cell membranes with contents in which the poison exists. In at least some of the pathogenic bacteria the toxin does not appear to be an essential part of the cell. We mean by this that some of the pathogenic bacteria may retain their vitality and still not manifest their pathogenic properties. This is well illustrated by de Schweinitz and others in their studies of the tubercle bacillus.

The pathogenic properties of a given bacterium are dependent on the poisonous character of the cell contents and the readiness with which the content is diffused through the cell wall, and this diffusibility is dependent on the solubility of the toxin and the permeability of the cell wall.

An increase or decrease in the virulence of a given bacterium can be explained in only one of two ways. The first possibility is that it is due to a chemical change in the toxin itself. This seems to us highly improbable. The second possibility is that heightened virulence is due to an increase in the amount of the toxin formed within the cell or to a greater permeability of the cell wall, one or both. The third possibility, that increased virulence may be due to more rapid cell proliferation, we reject as a rule, because it is well known that from some cultures of the diphtheria bacillus a more active toxin may be obtained than from other cultures in which there is more abundant cell growth. The relative proportion of cell membrane and toxin content is probably a variable one. It is furthermore probable that with increased cell content the cell wall becomes both thinner and more permeable.

It is probable that the toxins of the different pathogenic bacteria belong chemically to the same group of bodies and that they are proteid in character. Apparently these toxins vary in stability of constitution. This is indicated by the difference in the effect of heat upon them. As we shall show, the toxin of the colon bacillus may be heated with water in a sealed tube, to 184 degrees for one-half hour without decrease in virulence while the cells of the diphtheria bacillus become inert after prolonged exposure to a temperature of 60 degrees. That the cell walls differ in the readiness with which their toxin contents diffuse through them seems evident from the way in which diphtheria and tetanus bacilli induce intoxications while their growth is confined to a very limited area, as compared with the relative innocuousness of the colon bacillus growing abundantly in the intestines, and at the same time containing a highly active toxin.

This theory will require a long series of observations of the characteristics and action of many bacteria before its truth or falsity can be determined. but we believe that we have in the investigations we have carried on during the past few months established, in regard to the bacillus, the bacterium coli commune, certain facts which have an important bearing on the question, and which we hope may lead us in time toward further light on the chemistry of the bacterial toxins; and we feel sure that only when we have light on the chemistry of these toxins will the nature and action of the antitoxins be understood.

The literature of bacteriology and hygiene gives little information concerning our subject. A thorough examination of the publications within our reach shows that although a vast amount of work has been expended on the isolation and identification of some of the bacterial toxins, the progress made has been slow. In fact, it may safely be said that in no case has the chemical nature of the essential toxin of any of the pathogenic bacteria been shown. In the case of the group with which we are at present working, that of the colon bacilli, almost nothing of any real importance has been done toward showing the nature of their toxins; and investigations with any of the pathogenic bacteria along the line in which we are working, namely, the isolation and indentification of a poison which is an essential part of the cell content, aside from any poison which may or may not be dissolved in the medium surrounding the cell, are very rare.

A few communications are, however, worthy of especial notice. Two prominent observers have emphatically stated their belief in bacterial toxins which are an essential part of the bacteria themselves—Buchner in regard to the pathogenic organisms in general, and

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*Presented to the Section on Pathology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Pfeiffer in regard to the vibrio of Asiatic cholera. Buchner[1] describes his investigations on pus-producing substances in bacterial cells. The chief interest of these papers in the present connection lies in the statement of his belief that there is nothing in the whole category of decomposition products, caused by bacteria, to account for the phenomena of the general infectious diseases, but that the cause of these must be looked for in the albuminates of the bacterial cell itself, and that in some cases, at least, these poisons are only set free on the death and dissolution of the bacterial cell. By this theory he explains the fact that suppuration may be caused by dead cultures of germs which, when living, have not the pyogenic property. Further interest attaches to the similarity of his method of extracting the toxin to those used by ourselves. He first mentions various experiments going to show that sterilized cultures of certain bacteria have the same effect as the living cultures, and others showing that this effect is not due to the mechanical irritation caused by the dead germ. He showed also, by heating with steam under pressure at 120 degrees and by distillation, that the poisonous properties of the culture—in this case the pneumobacillus of Friedlaender—were not due to a readily decomposed or volatile substance. He then boiled his bacterial emulsion in a flask with a reflux condenser, and allowed it to settle, thereby obtaining a bacterial layer under a layer of clear fluid. Comparative injections showed that the poisonous principle was contained only in the germ layer. He carried out similar investigations with seventeen different varieties of bacteria, among which was the colon bacillus. In these he took the growth from agar or potato, rubbed it up to a thick emulsion with water, heated for one hour at 100 degrees and allowed it to settle. In all cases the injection of 1 c.c. of the emulsion after heating produced sterile pus-infiltration at the point of injection. In three cases only after settling did he obtain a clear fluid overlying the germ layer, and in these cases the fluid was non-toxic, while the germ layer caused intense pus formation.

In order to isolate the pyogenic substance from the bacterial cells, he added to the bacterial mass obtained from agar or potato about 20 volumes of .5 per cent. solution of potassium hydrate, obtaining thereby a mucilaginous mass which dissolved at the temperature of the water-bath. A clear fluid was obtained by repeated filtration, and from this the proteins were precipitated by acidifying and purified by resolution in alkali, reprecipitation and final resolution in just enough soda to neutralize the acid in the precipitate. The proteid thus obtained was found to have the pyogenic properties of the original bacterial emulsion. Similar results were obtained with a number of germs, though the most work was done with the pneumobacillus. Although the colon bacillus was one of those worked with, it is to be noted that no mention is made of a poisonous proteid being isolated from it by these methods, and, in fact, we were unable to extract any poisonous substance from this germ by means of dilute alkali.

Pfeiffer's[2] work on the cholera vibrio was carried out with the purpose of proving that the specific poison of this particular disease is a part of the cell content of the organism which is liberated and absorbed only on the death of the vibrio. His method was as follows: Having secured a virulent culture of the vibrio, he made a series of comparative inoculations with cultures treated: 1, by boiling; 2, by passing through a porcelain filter, and afterward heating in the steam bath for one-half hour; 3, by boiling and then passing through porcelain; 4, simply by rubbing up with small quantities of bouillon, living cultures; 5, by killing with chloroform vapor; 6, by killing with thymol; 7, by killing with absolute alcohol; 8, with concentrated solution of ammonium sulphate for twenty-four hours; 9, by drying; 10, by dry heat sterilization; 11, by passing a twenty-days-old 4 per cent. glycerin bouillon culture through porcelain; 12, by passing the glycerin extract of a fresh culture through porcelain. In 1, 3, 4, 5, 6, 7, 8, 9, and 10, the results were positive, the animals either dying or being severely affected, with very similar symptoms in all cases, the most marked of which was the rapid fall of temperature. In 2, 11 and 12 the animals were either not affected or affected very slightly. In 4, a minimum dose was established, smaller for intraperitoneal than for submucous injections, and smaller doses caused an illness terminating in recovery. Cultures made after death, from intra-abdominal injections, did not show multiplication of the germs, and, as a rule, showed diminution in number. Nor were the germs found in the intestines or organs. Pfeiffer did not succeed in isolating and purifying a chemical poison. His conclusion that the cholera poison was a constituent of the cell and liberated only on its death and dissolution was combated more than once, especially by Metchnikoff, Roux, and Salimbeni,[3] who put in collodion sacs living bouillon cultures of the cholera vibrio, and cultures killed by chloroform, and found that when these sacs were placed in the peritoneal cavities of animals, the living cultures caused death in a short time with all the symptoms of cholera, while the dead germs had much less poisonous power. Whether or not these experiments of Metchnikoff and his associate disprove Pfeiffer's theory that the poison of the cholera vibrio is liberated only after the death of the organism, is questionable, but at any rate they have no bearing on our theory.

The literature relating to the toxin of the colon bacillus is very meager. Kiessling[4] gives a thorough summary of all work done on this bacillus up to that time. Under the heading of "The Pathological Significance of the Colon Bacillus," he describes the investigations of a number of observers, beginning with those of Emmerich on his "Bacillus Neapolitanus," in 1885, most of which are not of interest in the present connection, as they were concerned with the pathogenic action of the living germ. However, Gilbert,[5] in 1893, demonstrated the poisonous properties of filtered cultures of this bacillus. He injected these cultures intravenously into rabbits, and though they were not uniformly poisonous in the same degree, there resulted paralysis of the striped muscle fibers with blunting of sensibilities and coma; then convulsions, nystagmus, and heightened sensitiveness and reflexes; and finally contractures and death. During the first two stages recovery was still possible, but in the last death was inevitable. Gilbert also concluded from his observations, that the poison was destroyed in the liver and kidneys. Roger,[6] in 1893, described an analogous action of the toxin on frogs. Wyssokowitsch,[7] in 1886, observed that the colon bacillus, when injected into the blood, appeared quickly and in large numbers in the intestines, and as this is possible only through alteration of the intestinal walls he concluded that with the micro-organism there is brought into the circulation some poisonous substance which causes marked gastro-enteritis and deep lesions of the mucous coat of the intestinal wall. On the other hand, Baginsky[8] was unable to obtain from nitrogenous food contaminated with this organism any substance having a poisonous action on animals.

Though numbers of observers have contributed to the literature of the pathogenesis of the living colon bacillus, since Kiessling's summary was written, the journals within our reach do not show anything having any significant bearing on the question of its toxin.

In 1898, Vaughan and McClymonds,[9] working on the pathogenic germs in cheese, made some observations on the toxin of the colon bacillus found in green cheese, of which the experiments now to be described are really a continuation.

Our own work, so far as we have carried it, has been briefly as follows:

EXPERIMENTS, SERIES 1, FEBRUARY AND MARCH, 1900.

The germ used in these experiments was obtained from a sample of drinking water which was supposed to have caused typhoid fever. It gives the typical colon reactions. One c.c. of a twenty-four hour bouillon culture kills guinea-pigs of 300 to 400 grams weight, within twelve hours, with the usual post-mortem appearances.

On January 31, 17 Roux flasks were inoculated. The growth was removed on February 28, with sterile water and a platinum wire. Centrifugation failed to separate the germs. Absolute alcohol was then added and the suspension was boiled in a beaker and allowed to stand for twenty-four hours, and the germ mass was then collected on a filter. The filtrate was evaporated on a water-bath to a small volume and injected into the abdominal cavity of a guinea-pig without effect. The form of the bacilli was not visibly—microscopically—affected by these manipulations, and they stained readily. The germ mass was then rubbed up in an agate mortar and dried to constant weight in a box water-bath. The dried germ still retained its form and staining properties. One hundred mg. of this dried mass, emulsified with water by boiling, and cooled, killed a guinea-pig on injection into the abdominal cavity, within twelve hours. Section showed the greater part of the germ mass lying in the cavity unchanged and the germs still unaltered in form. Boiling with .25 per cent. potassium hydrate solution does not extract any poison from 100 mg. of the dried germ, nor lessen the toxic effect of the dried germ itself, nor does heating in the autoclave at 130 to 140 degrees, for one-half hour.

Heating in a sealed tube, with water to 184 degrees for one-half hour, forms a milky emulsion which, on microscopic examination, shows granular material with a few unbroken cells. Injection of an amount of this emulsion corresponding to 100 mg. of dried germ into the abdominal cavity of a guinea-pig causes death with the same symptoms as before heating. When the germ mass is separated from the fluid by the centrifuge, both fluid and sediment cause death in the guinea-pig, with the irritant symptoms slight in both cases, but more marked in that of the fluid. Boiling with .2 per cent. HCl and neutralizing has no apparent effect on the toxin.

Two hundred mg. of the dried germ were subjected to forty-eight hours' artificial gastric digestion with a pepsin which was shown by control to be active. At the end of this time the supernatant fluid was poured off from the undissolved portion and an attempt was made to neutralize, but by mistake too much alkali was added. This fluid proved fatal when injected into a guinea-pig, but the symptoms were those of alkali poisoning rather than of the poisoning by the toxin of the germ. The undissolved portion, which proved to be partially soluble on the addition of more water, was fatal when injected in suspension in water—after boiling—while the small amount dissolved in 5 c.c. of water was not fatal, though the animal was markedly affected. In the guinea-pig killed by the suspension, a mass of the undissolved substance was found in the abdominal cavity on post-mortem examination.

The bacterial powder used in this series of tests gives the xanthoproteic and biuret reactions beautifully.

EXPERIMENTS, SERIES 2, APRIL AND MAY, 1900.

For this series a culture of the same bacillus used in the first was taken, but it was rendered more virulent by passing through rabbits until 3 c.c. of a twenty-four-hour bouillon culture killed a large rabbit in one and one-quarter hours.

Sixty moist chambers of 2 per cent. agar were planted with this bacillus, and left for a month at a temperature of about 25 to 30 degrees, and at the end of this time the growth was removed from the greater number and subjected to artificial digestion in an incubator. At the end of three days there was no separation into layers, but there was a cloudy fluid which could not be separated by the centrifuge. At the end of five days there was a separation into a deposit covered by a brownish opalescent fluid, colored probably by the coloring matter from the agar, and apparently free from suspended matter. A drop dried and stained showed only amorphous substances. A flocculent precipitate was slowly formed on dropping into absolute alcohol. The fluid gave the biuret, xanthoproteic and Adamkiewicz tests, and became less cloudy on neutralization with sodium bicarbonate. Ammonium sulphate gave a flocculent precipitate after neutralization. The germ mass was treated with four volumes of absolute alcohol, filtered, washed with absolute alcohol, and the residue on the filter scraped off, dried, and rubbed to a powder in an agate mortar. This powder is rather dark in color and amorphous. It is almost entirely soluble in water and more readily so on the addition of a small quantity of $NaHCO_3$. When boiled with water, cooled and injected into guinea-pigs, it is uniformly poisonous in doses from 4 mg., the largest, to 5/16 mg., the smallest, tried. There is little variation in the symptoms or the time required for killing with these various doses, the pig which received 5/16 dying within twelve hours as well as the one that received 4 mg. All the pigs showed marked symptoms shortly after inoculation, often falling within a few minutes and exhibiting some convulsive movements, but rising again and sitting motionless until a few hours later spasmodic movements of the legs began, then shortly they fell on their sides and remained there, continuing the spasmodic motions until shortly before death.

The bacterial powder used in this series of experiments also gave the biuret and xanthoproteic reactions.

These investigations need to be supplemented by a number of others regarding both the toxic action and the chemical nature of the substance we have obtained; and we hope later to be able to carry on similar investigations in regard to other species of bacteria—in fact, we have already begun a study of the bacillus of anthrax. We believe, however, that we are able to draw with some degree of certainty a few conclusions from what we have done already. These are as follows: 1. The colon bacillus in virulent form contains within the cell a toxin which is fatal to guinea-pigs of from 200 to 300 grams weight, in quantities of less than 1 mg. 2. The aqueous extract of the cells of the colon bacillus grown on agar is inert. 3. The entire germ is highly resistant to heat and to dilute acids and alkalis. 4. The cell wall of the colon bacillus is digested by the prolonged action of artificial gastric juice, which does not alter the toxin. 5. The toxin as thus obtained is insoluble, or but slightly soluble, in dilute acid, but is slightly soluble in water and more readily in dilute alkalis. 6. This toxin responds to the ordinary proteid reactions. 7. The toxin, after being freed from the cell membrane, is not destroyed by being boiled. We will endeavor by further research to determine more definitely the nature of this toxin and will extend our investigations to other bacteria.

REFERENCES

1. Centralbl. f. Bak., viii, 321; Archiv f. Hyg., x, 84.
2. Zeitsch. f. Hyg., xi, 393.
3. Annales de l' Institut Pasteur, x, 257; JOURNAL A. M. A., xxxi, 1898, p. 1117.
4. Hyg. Rundschau, 1893, p. 724.
5. Sem. Med., xiii, 1897.
6. Progrès Méd., xxii, 369.
7. Zeitsch. f. Hyg., 1886, i, 3.
8. Zeitsch. f. Phy. Chem., xiii, 352.
9. Jacobi's Festschrift, p. 108.

THE TRUE ROLE OF DRUGS IN THE MANAGEMENT OF CONSUMPTIVES.*

SOLOMON SOLIS-COHEN, M.D.
PHILADELPHIA.

Tuberculosis is curable, or rather, if we may use the word, it is recoverable. It is never cured by the physician, but by the patient himself; that is to say, by the natural powers of recovery. These however may be, and usually need to be, stimulated, assisted and directed by wise medical guidance. Under favorable surroundings at least three-fourths of those affected with pulmonary tuberculosis should recover. Many recover spontaneously, even under unfavorable conditions.

SECONDARY ROLE OF DRUGS.

In the physician's management of consumptives—that is to say, of persons affected with pulmonary tuberculosis—drugs play a useful, but a secondary part. The principal means of treatment for the relief or recovery of these patients are included under the general term of hygienic measures; that is to say, life in the open air, with abundance of sunlight; properly selected diet and clothing; the use of water freely, both internally and externally; rest and exercise, prescribed carefully and definitely, according to the stage of the disease and the general characteristics of the patient; the use of air at modified pressures, and the like. These bring about a physiologic reinforcement of the patient's recuperative energy, and this conquers the disease.

HYGIENIC MANAGEMENT NOW RECOGNIZED.

When I began writing on the subject of the treatment of pulmonary tuberculosis some fifteen years ago and in most of my communications on the subject since, these measures in whole or in part have been emphasized; and it is with the greatest gratification that I have observed this much neglected but ancient gospel, emphatically preached by Rush, in America, and Beddoes, in England, more than one hundred years ago, by Sydenham and others much earlier, and of which I have been an humble modern apostle, at last beginning to make itself felt, not alone in medical literature, but in contemporary practice.

THE OCCASION FOR DRUGS.

I may be pardoned, therefore, if on this occasion I speak of the use of drugs, of what may be accomplished with their aid, and of what it is useless to expect from them. Both in the general course of the disease—whether in its development toward destruction or in its progress toward recovery—and in the incidents and accidents accompanying this course, occasions arise in which the aid of drugs may usefully be sought to promote comfort, to prolong life, or to assist recovery. It is essential, however, that the physician should know definitely the powers and the limitations of the agents employed; that they should be used with definite purpose; and that their use should be sufficiently persistent while needed, but discontinued when its purpose has been accomplished.

What then are the indications for the use of drugs, and what their limitations? To answer these questions it is necessary to have a clear idea of the nature and progress of the pathologic conditions and processes embraced under the head of pulmonary tuberculosis. This is not the place to enter into detail, but certain broad outlines may be noted.

DEVELOPMENT AND PROGRESS OF PULMONARY TUBERCULOSIS. HYPOTROPHY.

In every instance of pulmonary consumption we have to deal with three distinct stages—with a fundamental or primary *(trophic)* stage, and with secondary *(bacillary)* and tertiary *(micrococcal)* stages of epiphenomena. The fundamental stage is a condition of lessened vital energy, lowered resistance, or malnutrition, which is not a mere vague "susceptibility," but a definite morbid state. For this, lacking a better term, we can adopt that proposed by Jaccoud, namely, "hypotrophy." I have elsewhere suggested the term "abionergy," but this involves a hypothesis not accepted by the profession or by science in general, and need not be insisted on. By whatever name we may term this state, it is not merely *a general depression of function*, but is accompanied with structural changes. In their intimate nature these escape our present methods of research, being probably molecular, and possibly located in the cell nuclei. When the hypotrophic status is inherited, or when it is congenital although not inherited, or when it has been acquired early in life, certain gross structural changes can sometimes be made out. Among these are especially to be noted relative deficiencies in the size of the heart and vessels and certain changes in the shape of the chest and in the physiognomy, to which attention has elsewhere been directed.[1] When it is acquired later in life these gross structural changes are not manifest.

It is in this stage that the recognition of the disease is of the highest importance and that hygienic treatment as well as roborant medication may succeed in averting the succeeding stages of destruction; but unfortunately there are no positive criteria by which it can be infallibly recognized. We can suspect, and the experienced observer can be nearly sure, that he has before him a subject of hypotrophy, but it can not be proved. The early recognition of the early tuberculization of the patient is less difficult.

SECOND OR BACILLARY STAGE. TUBERCULOSIS.

The second or bacillary stage follows the invasion of the bacillus of Koch, and is characterized by the definite histological changes giving rise to the term

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* Presented to the Section on Materia Medica, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

[1] *Consult* my article on "Tuberculosis," in Vol. i, of Hare's "System of Therapeutics," Phila., 1891, pp. 724, et seq.

"tuberculosis," and by an accompanying toxemia, of which the principal symptoms are irregular fever, cough, digestive disturbance, some degree of anemia and progressive loss of strength and flesh. The physical signs are now definite; slight percussion change, impairment or exaggeration of resonance with heightening of pitch, progresses to dulness perhaps just below one apex; the respiratory murmur progressively changes toward the bronchial type, cogwheel respiration being often the earliest sign; and there is progressive development, darkening and spreading of fluoroscopic shadows. Anemia of the pharyngeal and laryngeal mucous membranes is often to be observed. Sometimes the earliest overt manifestation is hemorrhage, a fortunate circumstance usually, as it leads to the prompt institution of treatment, and thus often to recovery. Cough is not infrequently absent. In this bacillary stage we have then as functional pathology, impairment of respiratory power, impairment of circulatory power, further failure of nutrition, further bacillary invasion, toxemia.

THIRD OR MICROCOCCAL STAGE. PHTHISIS. CONSUMPTION.

The third and most dangerous stage follows the invasion of various bacteria, principally belonging to the tribes of streptococci and staphylococci, for which the ground has been prepared by the destructive changes (caseation, etc.) of the preceding group of epiphenomena; those, namely, dependent on the invasion of the tubercle bacillus. Further destruction and further toxemia with hectic fever and increased emaciation, perhaps frequent hemorrhages, greater cough, progressive feebleness, sleeplessness, night sweats, diarrhea, dropsy, and the like, together with recurrent attacks of lobar and lobular pneumonia and other complications, local and general, mark the progress of phthisis toward death.

Histologically we speak of the secondary epiphenomena as the stage of infiltration; of the tertiary epiphenomena as the stage of softening or cavity-formation. Both processes may be present in different degree and extent in the same lung or in two lungs of same patient.

ACUTE AND RECURRENT TUBERCULOUS BRONCHO-PNEUMONIA.

I have excluded from consideration acute disseminated or miliary tuberculosis, of which the pulmonary phenomena are but part of a general process, from which recovery is at least doubtful. Attention must be called, however, to the group of cases of acute tuberculous bronchopneumonia, in which the secondary and tertiary groups of epiphenomena can not strictly be separated, occurring either coincidently or with but slight interval. Then, too, there is a group of cases in which destructive tertiary phenomena occur early, but in limited areas, and with but slight tendency to extension. The progress of the case is frequently interrupted by remissions or even by intermission of long duration.

COMPLEXITY OF SEMEIOLOGY.

Thus a varied and apparently contradictory semeiology arises, but analysis will always show that in some portion of the lung the secondary or tertiary phenomena predominate, and that the general symptoms depend partly on the local conditions, and partly on the predominant toxemia. There are thus minor stages or phases within the major stages.

NECESSITY FOR INDIVIDUALIZATION.

Quite obviously the treatment applicable at a given stage or phase of these complex processes differs from that applicable at any other stage, preceding or succeeding. Moreover, individual patients present great differences in their response to hygienic measures, these differences being dependent on the same constitutional powers or weaknesses that have enabled them to resist, or have made them succumb to some or all of the morbid influences. Thus each case becomes an individual study, and so continues throughout its different phases, and whatever is said concerning the general management of patients at various stages of the disease is to be understood as being thus qualified.

NO SPECIFIC.

We are now prepared to discuss the use of drugs. In the first place, it must be evident that no specific against the exciting causes of the disease or against any of the morbid processes is to be looked for. As the hygienic management of consumptives is designed to build up their vital resistance, so the auxiliary medication must have this for its primary object, incidentally combating special morbid phenomena or groups of phenomena which of themselves introduce special dangers. While I can not go so far as my friend, Dr. Mays, in looking on consumption as a neurosis, there is little doubt that among the failures of nutrition, which prepare the ground for tuberculosis, the nervous system is involved.

NERVINES.

Drugs useful from this standpoint are arsenic, strychnin, cod-liver oil, hypophosphites and other preparations of phosphorus, among which are probably to be included the nuclein group and thymus-gland extract. Strychnin should be given at first in small doses, and according to circumstances may sometimes be increased to very large doses, though only for limited periods. Its use should not be continued indefinitely, as this tends to exhaust nervous structure and nervous energy. Cod-liver oil is a fatty food and seems to have some special suitability to the needs of the nervous structures for aliment. Whether arsenic affects the nerves directly or indirectly through its action on the blood and other tissues, I do not know; but it is to be placed in the first rank as a nerve tonic. These agents are useful in the primary stage, before the invasion of the bacillus, and in the early stages of bacillary action. Their usefulness is less apparent in the later stages, though if recession of morbid phenomena takes place in these stages they may again be used.

DIGESTANTS.

Agents to improve digestion are useful from the standpoint of general nutrition. These do not differ in principle, in method of application, or in character, from the agents used for similar purposes in other affections. Strychnin and arsenic again have application; while lavage or the drinking of hot water and the use of gastric and intestinal antiseptics, sedatives and stimulants; of phosphoric, hydrochloric and nitric acids; of digestive ferments, pepsin, pancreatin, diastase, papain and the like, must be guided by the special symptoms and responses of the individual case.

HEMATINICS.

As a rule there is very little positive anemia in the early stages of tuberculosis, but the same group of hematinic agents that are used in other anemias are applicable here. Thus again arsenic is of service; and iron, gold and sodium chlorid, palladium chlorid, the nucleins, bone-marrow and the like also prove useful.

ELIMINANTS.

It is necessary that the skin should be kept in good condition and that all the eliminative functions should be properly performed. The daily bathing and sponging tends to keep up the tone of the peripheral vessels and of the skin, while diuretics and laxatives, of which spartein and cascara may be taken as types, are employed from time to time if indicated.

AGENTS ACTING ON THE CIRCULATION.

The condition of the circulation needs separate study, and more specially in the primary stage and in the acute manifestations of the tertiary stage. I desire therefore to call special attention to the usefulness of nitroglycerin in the early stages and of digitalis in the acute processes of the tertiary stage.

Nitroglycerin by its action in relaxing the peripheral vessels both in the systemic and pulmonary circulations, permits the work of the heart to be performed better and with less expenditure of vital energy. Vascular insufficiency is, as we have already noted, one of the characteristics of congenital hypotrophy, and the absence of blood-channels from the histological tubercle is not without significance in this connection. One of the greatest advantages of the use of the inhalation of compressed air with expiration into rarefied air, as well as one of the chief factors in the altitude cure of pulmonary tuberculosis, is the increased distribution of blood and nutrient lymph into the ultimate vascular channels and pericellular spaces. Even without the inhalation of compressed air, nitroglycerin aids such dissemination of reconstructive pabulum, as well as the better collection and excretion of waste which accompanies the improved ultimate circulation.

Digitalis was especially commended by Beddoes as the result of his empiric observation, in cases of galloping consumption, with high fever and rapid pulse, and he reported striking instances of the benefit following its use. I have no rational explanation to offer of this action, unless the inhibition of the heart may account for it, but empirically I can confirm Beddoes' observation. I have frequently seen remarkable reduction of fever and the accompanying group of hectic phenomena follow the use of large doses of digitalis, both in the late stages of chronic pulmonary tuberculosis and in the recurring acute attacks of tuberculous bronchopneumonia, or of lobar pneumonia in tuberculous patients. It must, however, be given continuously and fearlessly, up to the point of tolerance, the only counterindication being evidences of untoward effect on the stomach. Merck's German digitalin may then be used in its place; the dose being from 1/24 to 1/8 of a grain, or even more, thrice daily.

IODIN GROUP.

Of drugs used to combat more or less directly the local and hemic results of bacillary invasion, two groups of agents have stood the test of time—the iodin group and the creosote group. The first is applicable especially in the early stages of pulmonary infiltration; the latter, when destructive changes belonging to the bacillary phenomena have begun, and also when the pyemia and increased destruction of the tertiary processes are manifest. The most useful of the iodin group is iodoform, which must be given in comparatively large doses and over large periods. The dose, however, is to be small at the beginning and to be increased very gradually to the point of tolerance. If there is any disease whatever in which it is a mistake to look for results quickly or to be in a hurry to make changes in the administration of drugs, it is the one under consideration. Chronic cases require chronic, that is to say, persistent treatment, and the organism must often be accustomed gradually to the remedy. Beginning with ½ grain of iodoform three times daily, after meals, the dose may be increased, little by little, until in the course of two or three months it reaches 5 grains, three times daily. Balsam of Peru is an excellent excipient and the addition of a digestive ferment sometimes enables it to be borne by stomachs otherwise intolerant. Iodoform may usefully be combined with iron, with arsenic, with strychnin, and with digitalis, in cases in which these latter drugs seem indicated.

A favorite formula of my own in the early stages of the bacillary disease is as follows:

℞.	Iodoformi	gr. i-iii
	Strychninæ sulphatis	gr. 1/40
	Arsenii iodidi	gr. 1/12
	Balsami Peruvianæ	gr. ii-v

Mix and encapsulate. Dose: one capsule after meals three times daily.

Sometimes ichthyol is used as the excipient, with or without the Peruvian balsam. Ichthyol has itself been recommended as of use in pulmonary tuberculosis, in doses of 5 grains or more, thrice daily. Crude or refined petroleum may be used similarly.

Flick, of Philadelphia, a careful observer and accurate reporter, states that he has seen much benefit from the inunction of iodoform in cod-liver oil or lanolin. Lately he has substituted europhen for the iodoform, on account of the disagreeable odor of the latter. For the benefit of those who prefer to use iodoform in this way, I would state that attar of rose in very minute proportion will successfully mask the odor. My own experience with the inunction method is slight, and it did not seem to possess any special advantage over the administration of the drug by the mouth. Iodoform dissolved in sterilized olive-oil, in the proportion of 1 to 10, may be given likewise by intratracheal injection, in quantities not exceeding ½ dram.

Powdered iodoform may be insufflated into the larynx, or iodoform dissolved in ether—1 to 10—be applied by sponge, especially in cases of tuberculous laryngitis, after the application of lactic acid or formalin, and the dose need not be measured especially. There is no objection to covering the entire area of laryngeal and perilaryngeal tissues accessible, and doubtless some good effect is due to systemic absorption as well as to the local action. Other iodin preparations are Lugol's solution, compound tincture of iodin, arsenic iodid, iron iodid, and metallic iodin encapsulated with some fatty or mucilaginous vehicle or emulsionized with cod-liver oil; all of which may be used under special conditions not necessary to detail here.

CREOSOTE GROUP.

The creosote group is large and contains a number of useful agents—carbolic acid, creosote, guaiacol, and combinations of creosote and guaiacol. I have not used carbolic acid for internal administration, though it may sometimes be usefully employed locally, in proper dilution, and has been given hypodermically in sterilized olive-oil, in strength of from 1 to 10 per cent., and in doses of from 1 grain to 10 grains. The urine must be carefully watched when carbolic acid or creosote is used in this way. Beechwood creosote is a sufficiently good prepartion, provided a pure article can be obtained. Much of the commercial creosote contains impurities that irritate the stomach and the kidneys, but there are at least two good preparations in the market, and if care be exercised to obtain one of these the drug can be given in very large doses without untoward effect. Beginning with ½ minim three times daily, it is my custom to increase cautiously up to the point of tolerance, maintaining at that point or decreasing, according to the results in the individual case. I have given as much as 40 minims three times daily. An average dose is 10 minims three or four times daily. It may be given in milk, in which case two hours after meals is a very good time for its administration, as thereby the patient is induced to drink a glass of milk at that time. It may be shaken up with cod-liver oil and taken immediately after meals, or it may be made a part of a compound emulsion of cod-liver-oil. It should not be given in capsule unless associated with at least 5 minims of an oily vehicle to each minim of creosote. Capsules may thus be prepared with morrhuol or cod-liver oil as excipient. When creosote can not be taken by the stomach in sufficiently large doses, it may be given emulsionized with cod-liver oil or milk, by the rectum, and some have given it in sterilized olive-oil hypodermically. Creosote carbonate, commercially known as creosotal, is perhaps the best form in which to give creosote, as it rarely upsets digestion, the taste is not objected to, and in many cases it can be given in dram doses without untoward effect. Such doses may be persisted in for prolonged periods. I frequently give it in hot milk two hours after meals, though it may be given in water or without vehicle, if taken at meal time. The objection to it is its high cost. Recently creosote valerianate and other creosote combinations have been brought forward and are said to possess advantages over those mentioned. I have had as yet too little experience to speak positively concerning this.

Guaiacol, to which some attribute all the good effects of creosote, may be given in the liquid form, just as creosote is given; or its salts, which are tasteless powders, may be substituted. Of these, I prefer on the whole guaiacol carbonate, though in certain cases the benzoate and the salicylate seem to have advantages; the benzoate especially when there is a tendency to diminution of urine and the salicylate when high fever is a marked symptom. The dose is 10 to 60 grains daily, 20 grains being an average dose. Guaiacol potassium sulphonate is a recent addition to the list of combinations and is highly lauded by some writers. The objection to the guaiacol salts also is their cost. Their great advantage is the readiness with which they can be administered, and their lack of untoward local effect. Liquid guaiacol sometimes has seemed to be useful as an analgesic and antiphlogistic application topically in cases of laryngeal infiltration. As its pain-relieving effect is preceded by intense burning, the latter should be guarded against by a preliminary application of cocain, as in the case of other local agents. It is a useful ingredient in external applications to relieve pain; and slowly rubbed in drop by drop, in doses of 20 to 40 drops, the site of application being then covered with cotton and oiled silk, it may serve as a temporary expedient to reduce high temperature otherwise uncontrollable. One must guard against chill following this method.

BALSAMICS AND TEREBINTHINATES.

Another group of drugs useful in controlling morbid conditions, especially catarrhal processes, in the lungs and bronchi, in relieving cough, and in correcting the character of the expectorated matters, is formed by the balsamics and terebinthinates. Of these I would call special attention to myrtol, which may be given in doses of from 5 to 10 minims, dropped on sugar, encapsulated, or emulsionized, just as one would give turpentine, terebene, eucalyptol, or other agent of this group. For the production of results, its use must be persisted in for several weeks at least. Ichthyol also may be given internally in capsule, alone or combined with some of the drugs already mentioned, and seems to have especially good effect in the correction of collateral fetid bronchitis.

For the correction of local conditions in the throat, trachea, and bronchial passages, and in combating the septic processes of the tertiary stage, so much more destructive than tuberculosis in itself, as well as for sedative effect, drugs may be employed by inhalation or by intratracheal injection.

INHALANTS.

For inhalation, myrtol, eucalyptol, thymol, menthol, oil of peppermint, camphor, chloroform, bromoform, creosote, formaldehyde, and ethyl iodid may be used singly or variously combined. The little perforated zinc respirator, designed by Dr. Burney Yeo, is an extremely useful appliance for this purpose, and for continuous respiration by its aid combinations like the following may be used: chloroform, eucalyptol, creosote, alcohol, equal parts; myrtol, chloroform, terebene, equal parts, etc.

ETHYL IODID AND FORMALDEHYDE.

Among these drugs, however, I desire especially to signalize two, ethyl iodid and formaldehyde. The former may be used very simply by merely unstoppering the amber-colored, little-necked, ounce vial in which it should be kept. The heat of the hand is sufficient to volatilize the medicament. The vial may be held to the mouth or nostrils and deep breaths taken for from one to five minutes, according to the effect. This may be repeated as necessary; in cases of irritative cough, as often as every half hour. It is especially useful in cases of laryngeal tuberculosis. I have experimented in various ways to obtain formaldehyde in proper shape for inhalation. The little lamp, by means of which paraform is converted into formaldehyde gas, has seemed on the whole the best. This is allowed to impregnate the air of the room in which the patient remains, menthol or eucalyptol being sometimes volatilized concurrently; or, covering his eyes, the patient sits by the lamp and every now and then gathers in his incurvated palm some of the gas diluted with atmospheric air and inhales that; or paraform tablets may be crushed in the hand, and the endeavor made to get a certain amount of diluted gas from this. Or in a simple wash-bottle inhaler of 12-ounces capacity a solution of formaldehyde in water may be added to glycerin and aromatics, the whole mixture making about 3 ounces. The strength of the formaldehyde solution is from 1 per cent. to 2 or 3 or even 5 per cent., as the patient bears it. None of these methods, and no other method that I have employed, is entirely satisfactory. If formaldehyde gas, properly diluted, could be collected in a reservoir and from this inhaled, as oxygen, nitrous oxid, and the like are inhaled, it would undoubtedly be useful.

PALLIATION OF FEVER.

In the course of the disease, whether toward recovery or death, there are a number of special symptoms and symptom-groups developed, for which palliative measures may be employed. Some of these may be referred to briefly. Fever, that is to say, temperature persisting at, or persistently recurring to, 100 F., or more, needs palliation, preferably by rest and the application of an ice-bag over the heart. And I may here interpolate that a long sea-voyage is the best possible treatment for patients exhibiting this tendency. The coal-tar products may be used cautiously if necessary to give the patient comfort; they are not curative of the conditions—the intoxication—causing the fever. Much better in many cases is the inhalation of nitrous oxid in the forenoon—i. e., before the expected rise of temperature—usually in two sittings, two hours apart; about 8 gallons mixed with atmospheric air, at each sitting. The mixture is obtained by inhaling pure nitrous oxid through the mouth, the nose being left uncovered. The ordinary cylinder and wash-bottle form the preferable apparatus. Oxygen inhalations are counterindicated.

TREATMENT OF HEMORRHAGE.

Hemorrhage, an alarming accident to the patient, the family and the inexperienced physician, will subside spontaneously in nine cases out of ten, if the patient be put at rest. Cold applications are generally useful, an ice-bag being applied over the heart, or over the seat of bleeding, if that can be located without undue disturbance to the patient. Cold food only is to be given, and in small quantities. Use of the voice is to be interdicted, and laxatives should be given to prevent straining at stool. When necessary, the force of the heart's action can be reduced by aconite in appropriate doses, and cough be checked by opium, codein, or morphin. It is possible that heroin may serve better than the natural morphin. In severe cases, morphin may be given hypodermically up to the point of tolerance. The most generally useful drug to promote coagulation of blood and the formation of permanent clot, sealing the wound in the vessel or vessels, is crystallized calcium chlorid. With this, codein, turpentine, or thymus extract may be associated. The calcium salt is to be given in dilute solution in comparatively large doses, say 15 grains every second hour; for not more than four days consecutively. If medication is still necessary, lead acetate may then be given—say 3 or 5 grains in pill with an equal quantity of tannic acid and perhaps a grain of opium, three or four times daily. After two or three days, aromatic sulphuric acid should then be given, after which, if necessary, the calcium salt may be resumed. Ergot is useless in most cases. Atropin sulphate, say 1/120 grain, given hypodermically at the beginning of hemorrhage will often cut it short. Hydrastinin hydrochlorate is among the useful astringents.

NIGHT-SWEATING.

For night-sweating, agaracin, hyoscin hydrobromate, potassium tellurate, camphoric acid, atropin, strychnin, picrotoxin, and the like, are useful internally, while sponging with alcohol and alum, or with an alcoholic solution of quinin, or dusting with zinc oxid or zinc oleostearate will sometimes render internal medication unnecessary.

DIARRHEA.

Diarrhea is often exceedingly troublesome and not to be controlled by regulation of diet. Among the drugs useful in different cases are arsenic, mercuric chlorid, cupric sulphate, iron sulphate, tincture of ferric chlorid, opium, tannic and gallic acids, bismuth salicylate, benzonaphthol, salol, guaiacol salts, etc. Before using either astringents or opium, the bowel should be thoroughly washed out by the administration of calomel in small doses, followed by a saline laxative, and this by irrigation with hot—physiologic—saline solution. Notwithstanding, however, the combined use of astringents, opiates and antiseptics, this symptom proves rebellious in many cases.

CONCLUSION.

The object of this paper, however, has not been to go into details of treatment or to advocate the use of any special agent in any special condition; above all, not to seem to prefer drugs to the hygienic and nutritional measures already sufficiently alluded to, and of which may again be specified open-air life with abundance of sunlight, as the most important of all. I have wished simply to indicate for what purposes drugs may wisely be employed, and to suggest different groups of agents applicable for these purposes, from which choice is to be made according to all the circumstances of the particular patient, time and place. Bearing in mind the limitations of drugs as well as their powers, and carefully selecting them for definite purposes, they may thus be made to fulfil their useful, but secondary part in the treatment of patients having pulmonary tuberculosis.

THE IMPORTANCE OF AN EARLY DIAGNOSIS OF TUBERCULOSIS.*

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The failure to recognize tuberculosis in its incipiency is the result of several causes: Tuberculosis has an insidious beginning. Most patients do not recognize the nature of their trouble until a lesion is well established, and frequently when they consult a physician the disease is well advanced. The symptoms which belong to the incipient stage are not easy of recognition and are frequently misinterpreted by the examining physician. Many patients will not accept the facts until it is too late. Many physicians fail to give the facts at this stage for fear of frightening patients.

These are the principal reasons why tuberculosis is frequently unrecognized until it is too late to hope for relief; and, also, furnish an explanation for the widespread belief that tuberculosis is incurable.

Before beginning to discuss the subject of the early recognition of tuberculosis it seems essential that some definite method of classification should be understood. Almost as many methods of subdividing the disease have been considered as there are those who have given the subject special study. There seem to be few distinct lines of demarcation which serve in making a subdivision that is without criticism. The pretubercular state, the early stage, and the advanced stage are terms which are frequently used; but these terms convey very little definite information, unless they are qualified by a more minute description.

This subject, however, is of too serious import to justify the useless discussion of mere technicalities. The classification which I shall adopt in this discussion rests upon a histological basis, supplemented by the bacteriological principle that a congenial culture-medium is essential for the growth of pathogenic germs. This classification will admit of three fundamental stages:

1. *Pretubercular Stage.*—This stage is accompanied by a diminished resisting power. We have an impairment of function without a change in the structure of the tissues. The tissues are reduced to a more or less weakened state and furnish a congenial soil for the development of bacilli; but the bacilli have as yet not gained an entrance into the tissues and commenced active development.

2 *Stage of Tubercle Formation, or of Constructive Tissue Changes.*—This stage begins with the introduction of bacilli into the weakened tissues and is known as

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early incipiency. We have rapid cell-proliferation and the formation of tubercles or small neoplasms. We have a transformation of tissue without disintegration, accompanied by a further impairment of function. This stage extends to the beginning of tissue disintegration.

3. *Stage of Destructive Tissue Changes.*—We have softening and breaking down of tissue or fibroid transformation and atrophy of tissue, with more or less complete loss of function.

Nature of Tuberculosis.—Many views have been entertained as to the nature of tuberculosis, and may be arranged into three groups: that bacilli constitute the sole factor of tuberculosis; that the soil is the sole factor and that bacilli play a secondary part; the dual theory that the germ and the congenial soil are equally responsiple factors.

It is foreign to our purpose to discuss the merits of these views. Let it suffice to say that the dual theory is accepted as the basis of the remarks which are to follow.

THE PRETUBERCULAR OR PREPARATORY STATE.

The conception of the dual nature of tuberculosis renders a pretubercular or preparatory state indispensable. This brings us to the nature of the resisting power of an organism and the methods by which this resistance is reduced.

It is a well-conceded point that the resisting power to disease is measured by protective substances which are elaborated by the organism itself. These substances are believed to be the products of cell-metabolism and are known as antitoxins. When the changes are brought about in an organism which diminish the production of this protective material, the natural defense of the organism is thereby weakened and invading germs meet with little resistance.

Since the resisting power of an organism can be traced ultimately to but one source—the cellular elements of the organism—a strong resisting power is the manifestation either of a strong phagocytic power, or of a strong antitoxic power, or of both combined. Furthermore, since antitoxins are the metabolic products of the body-cells, a potent antitoxin presupposes vigorous cells; and inversely, if the potency of the antitoxins is feeble, it presupposes a feeble cell-activity. Hence, if the vital forces of the body-cells of an organism are too feeble to produce antitoxins of standard potency to protect it against a certain species of germs—which normal organisms of the same species are able to resist—its resisting power is impaired.

On the other hand, if it should be claimed that the resistance to tuberculosis depends on a vigorous phagocytosis, a strong resistance to the disease presupposes vigorous body-cells; and inversely, a feeble resistance presupposes weak and poorly nourished body-cells.

With this explanation of the pretubercular state we have a rational hypothesis on which we can rest. It furnishes an explanation why persons in this state readily develop tuberculosis, and offers an argument why we should strive to recognize this condition.

The pretubercular state, therefore, may be defined as the condition of feeble activity of the body-functions, producing in consequence a diminished potency of the protective substances of the organism, thereby furnishing a fertile soil for the development of the bacilli of tuberculosis.

The influences which aid in the development of tuberculosis are of two varieties: predisposing factors, and exciting factors. The first variety comes with a bad family history. Persons possessing these factors may be recognized as possessing the following characteristics: a frail organism with feeble functions; narrow chest; drooping shoulders; diminished chest expansion; weak nutritive processes and feeble powers of endurance. The existence of these predisposing factors is evidence of a weak resistance to disease and often may be recognized early in life. To those familiar with the early signs of tuberculosis the significance of these factors needs no comment. To the predisposing factors we must add a class of exciting factors. These are the influences which tend to diminish the already weakened resistance of the individual. To a great degree these factors are under the control of the individual. Examples of this class are insanitary surroundings; sedentary or irregular habits; dissipation; indoor occupation; prolonged overwork; and serious illness. Few persons can withstand the prolonged action of these exciting factors without yielding their resisting power. Especially is this true of individuals who have inherited a weak resistance. Sooner or later opportunity for infection will be presented and persons with a weak inheritance will imperceptibly and unconsciously pass from the pretubercular state into the stage of actual tubercle formation.

The duration of the pretubercular or preparatory state varies according to the degree of the impaired resistance of the individual and the nature of the existing factors. An early recognition of the pretubercular condition as described, and an early attempt to correct it, may enable the individual to recuperate his forces before bacilli gain a lodging in his tissues. Many a person may thus, by judicious care, prevent the actual development of tuberculosis, although there may be a strong predisposition, and ultimately he may die of some other disease. Unfortunately, however, much time is frequently allowed to elapse; the unfavorable influences are allowed to continue; the patient refuses to heed the signals of alarm, and before he is aware of his condition, active incipient tuberculosis is established.

THE STAGE OF TUBERCLE FORMATION.

This stage dates from the time when tubercle bacilli gain admittance to the weakened tissues and begin active development. The chief object of this paper is to collect and classify the evidence which points to the existence of the incipient stage.

Classification of Evidence.—The total evidence of this most critical period of the patient's history may be classified as follows: 1, family and personal histories; 2, clinical symptoms; 3, physical signs; 4, microscopical evidence—blood and sputum; 5, X-ray evidence; 6, tuberculin test.

The early evidences are by no means uniform in the order of their development. The evidences most frequently observed and significant of approaching danger, if properly interpreted, are the following: Impaired nutrition, loss of appetite, gastric and intestinal disturbances, accompanied by loss of weight and strength: dyspnea and fatigue after light exercise, accompanied by small, rapid and variable pulse; slight but persistent cough in mornings and on deep inspiration; impoverished blood state; hectic flush, hemorrhage, altered or suspended menses; sore throat, hoarseness and aphonia; pleurisy pains; glistening eye, dilated pupils, leaden hue of the sclera; insomnia, night sweats; subnormal morning temperature and afternoon or evening fever.

The Value of Early Evidence.—As to the importance to be attached to the early symptoms of tuberculosis it is well known that many erroneous opinions prevail. In this connection it might not be amiss to note a few points, although on account of limited space many valuable points must be left unnoticed.

Chief among the misinterpretations of diagnostic evidence is the altogether too-prevalent opinion that the presence of tubercle bacilli in the sputum is one of the earliest manifestations of the disease. During the period of tubercle formation bacilli are located in the deeper tissues of the body. During this period bacilli rarely make their appearance in the sputum, notwithstanding patients are already suffering from tuberculosis. When bacilli are found in the sputum it is evidence that the disease is well established; while if bacilli are not found, their absence is not sufficient evidence to exclude tuberculosis. Therefore, for diagnostic purposes in the early stages of tuberculosis I am of the opinion that we overestimate the importance of the examination of the sputum.

A series of clinical symptoms invariably precedes the breaking down of tubercles and the appearance of expectoration containing bacilli. For the purpose of making an early diagnosis it is therefore of special importance that we should be able to recognize and properly interpret these early symptoms.

The cogwheel respiration has for some time impressed me with its diagnostic value of early areas of pulmonary infiltration. This, to my mind, is underestimated as an early symptom of pulmonary tuberculosis. This phenomenon is frequently observed when no other stethoscopic evidence of the disease can be detected, and subsequently other symptoms of tuberculosis develop. I have observed this phenomenon more distinctly during the latter part of forced inspiration and also find it synchronous with each cardiac systole. The areas over which it is elicited are local and circumscribed. It seems to be increased with the force of the heart and therefore is more distinct after light exercise.

Let us briefly consider the factors involved in the production of this symptom. During forced inspiration the entire available lung space is occupied by air; the lung tissues are compressed and, for the time being, make greater pressure against the pulmonary vessels; this in turn tends to prevent the vessels from expanding under the heart's contraction. Infiltrated tissue possesses diminished elasticity. Therefore the blood-vessels in a circumscribed area of infiltration are unable to enlarge their caliber under the increased blood-pressure accompanying each beat. This diminished compensation of the blood-vessels of the infiltrated tissue necessitates an increase of friction of the blood against the walls of the vessels in these areas; and this increased friction is further increased during inspiration. I would not be understood as believing that this phenomenon is always present or that it is always significant of tuberculosis. I believe, however, that it is evidence of impaired functional activity of small areas of lung tissue. Therefore whenever I recognize this characteristic respiration I suspect areas of diminished resistance and endeavor to keep the patient under close observation for further evidence of tuberculosis.

A rapid and variable pulse is an early symptom of pulmonary tuberculosis of no small significance. This is especially pronounced after moderate exercise. Therefore the recognition of this symptom invariably calls for a careful physical examination of the chest for initial areas of infiltration.

Cough is often the first symptom to attract the attention of the patient. I have, however, frequently seen patients in incipient and well-advanced stages in whom there had been no complaint of cough or chest symptoms.

Pleuritic friction sounds may almost always be considered of tuberculous origin, and are often early symptoms.

Râles do not properly belong to the early stage of tuberculosis. They are frequently present when the area of infection is very limited. But in such patients the diseased area may have existed some considerable time before the tubercles undergo softening; then râles become recognized.

Hemorrhages are often the first symptom of the local disease. Hemorrhages are not always due to a tubercular lesion. They may result from violent exercise, physical injuries or other causes; but a hemorrhage should serve as a warning to a patient that a lesion exists in the lung which offers a fertile soil to tubercle bacilli: and furthermore, while such a condition exists, the patient is in constant danger of becoming infected. Such persons should exercise great precaution to avoid infection and at the same time make use of every possible means to restore the injured tissues to their normal state by appropriate rest and tissue nutrition.

I have found a study of the blood an important factor in revealing impaired metabolism and a low state of the vital functions. For years I have kept records of the blood and sputum in all cases of tuberculosis. A study of these records is evidence that the blood phenomena are of greater service in revealing the actual condition of the patient than those furnished by the sputum. The nature of the study has been a differential estimate of the leucocytes made from a stained film of blood and a study of the morphological appearance of these cells. The limited time alloted to a paper of this nature will not permit of a description of the phenomena presented by tuberculous blood, especially since a description of these phenomena has been attempted in former articles.[1]

A subnormal morning temperature is one of the earliest and I believe most valuable means of revealing the pretubercular and incipient stages of tuberculosis. When persistently present we may be certain of a low vital state. Frequently a subnormal morning temperature is unaccompanied by an afternoon or evening fever. I am inclined to believe that when a subnormal morning temperature persistently continues it points to a pretubercular state, and that the patient is approaching dangerously close to the incipient stage; also, that when it is accompanied by afternoon or evening fever it is strong evidence of actual tubercle formation. It should be remembered that many tuberculous patients do not develop fever, and yet these persons almost invariably have a subnormal morning temperature. It should be noted, however, that before a marked subnormal temperature or any other symptom should be accepted as evidence of tuberculosis it should be supported by other signs of danger.

This suggests the inter-relationship of symptoms. We should bear in mind that though a single symptom is evidence it is not sufficient to confirm a diagnosis. We rarely, if ever, find an important diagnostic symptom of incipient tuberculosis unaccompanied by other important symptoms. The intimate relationship between symptoms is therefore a point not to be overlooked in making a diagnosis. For example, with impaired nutrition, loss of appetite and gastric disturbances loss of weight and strength will follow. Let these symptoms continue and the patient will soon experience fatigue after light exercise, accompanied by a rapid and variable pulse. An impoverished state of the blood is also inevitable. Thus the symptoms will multiply and the resisting power of the patient will imperceptibly diminish; and yet, notwithstanding the accumulation of evidence the patient will rarely acknowledge that he is in danger. He realizes, however, that he is more susceptible to exposure; takes cold more readily; recuperates more slowly. A slight catarrhal condition often remains. The patient continues his occupation and makes no effort to remove the influences which are daily increasing the danger. Up to this point how many patients suspect tuberculosis? How many consult a physician? And if the physician is consulted, how often is tuberculosis overlooked for the grip, bronchitis, or some other less dreaded malady?

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[1] Medical Record, Sept. 5, 1896, p. 325; March 13, 1897; Journal A. M. A., xxix, 17, p. 828.

The Neglect of the Early Signs of Warning.—Examples are all too numerous where the early signs of warning have been unheeded. Inevitably the symptoms progressively develop and the patient passes from the realm of doubt to one in which the most positive evidence is present. The diagnosis is finally accepted after the disease has made rapid progress; but during this period of delay a large percentage of patients lose their only chance of recovery.

Finally, unless we become familiar with the symptoms which accompany the "pretubercular state"—symptoms which develop during the period which leads up to actual tubercle formation—the most valuable period for treatment is lost. Therefore with each case of suspected tuberculosis an important question is presented. How can doubt be removed and the diagnosis confirmed?

On this point I feel that we are safe in adopting the following rule: When the characteristic symptoms which usually accompany incipient tuberculosis are present and persistently continue and we are unable to account for them from other causes, we are justified in suspecting concealed tuberculosis.

The Tuberculin Test.—After having considered the symptoms, the history, the physical signs and the general appearance of the patient, if doubt remains we have a court of last appeal—the tuberculin test. Until recently we were often obliged to remain in doubt in incipient cases, but since the diagnostic value of tuberculin has been established we have no excuse for delay when the symptoms are sufficiently marked to point to tuberculosis. I wish to record my confidence in this means of settling doubtful cases. The danger of tuberculosis is too great to justify our remaining in doubt when we have a reliable diagnostic agent at our command, and especially so since there is little or no danger when it is properly administered.

I prefer to administer the tuberculin late in the afternoon or evening. If a tubercular lesion exists, the reaction usually comes from six to twelve hours later. As previously stated, I find the subnormal morning temperature quite as significant of tuberculosis as the afternoon fever. Therefore if the tuberculin is administered in the evening and a morning fever follows its use, it is evidence of a reaction and points to a tubercular lesion. If no reaction follows the initial test an interval of a few days is allowed to elapse and a second test is administered, and finally a third.

If the tests are properly administered and no reaction is experienced we may feel safe in excluding tuberculosis. It is well, however, to repeat the test at short intervals if the patient's condition remains unimproved.

The use of tuberculin as a differential agent is a subject with many problems awaiting solution. The nature of the reaction, if any, which may be experienced by persons in the pretubercular state and the dose that will be tolerated before a reaction may be expected, are subjects which should call forth our best efforts and most careful observations.

Treatment.—The essentials of successful treatment are alimentation, medication and environment. Malnutrition is a constant condition in tuberculosis. Poor digestion and non-assimilation are always present to a greater or less degree. Hence, a correction of this condition is one of the first points to be considered in therapy. Overmedication is too frequently practiced. Any treatment which impairs digestion is injurious.

The ability to react to treatment depends upon an early recognition of the disease, the degree of impairment of the nutritive processes, and an early correction of unfavorable environment and modes of life.

A properly-selected climate is essential, but patients must seek it early. The advantages to be gained from climate will depend upon the amount of time spent in the open air and sunshine, the thorough ventilation of the living and sleeping rooms, and the maintenance of a normal state of the digestive functions. In conclusion we may summarize as follows:

1. The fact should be more generally recognized that if the vital forces become impaired from any cause whatever, the resistance to the tubercular infection is diminished and the danger of infection increased. Prolonged overwork, dissipation or exposure weaken an organism. The tissues of such persons constitute a fertile soil for the infecting germs. When the germs are brought in contact with the weakened tissues they find favorable conditions for propagation. This marks the actual beginning of tuberculosis.

2. It should be remembered that an early diagnosis is of supreme importance. If we hope to secure good results we must resort to means of examination which will enable us to detect the disease before it has become firmly established.

3. There are early symptoms which make their appearance long before the stage of expectoration.

4. Expectoration is frequently present for a considerable time before bacilli can be found.

5. The diagnostician who delays for the appearance of bacilli in the sputum fails to diagnose the disease in its incipiency and loses the most valuable period for treatment.

6. When the early symptoms are present and no other cause can be found to account for them, we are justified in suspecting tuberculosis.

7. Before arriving at a definite diagnosis we should consider well the previous history, the general appearance of the patient, and the symptoms. After carefully weighing all that can be secured from such a study we should resort to early and repeated physical examinations of the chest; a bacteriological examination of the sputum, if the disease has advanced to this stage; a microscopical examination of the blood; and if doubt remains we should finally resort to the tuberculin test.

8. After the disease is discovered the fact can not be too strongly emphasized that patients can not remain surrounded by insanitary conditions and regain their health.

9. With the exercise of greater care on the part of both physicians and patients in recognizing the early symptoms of tuberculosis, and a more rational use of means to prevent infection, we may expect fewer cases of tuberculosis and a greater percentage of cures.

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DISCUSSION ON PAPERS OF DRS. SOLIS-COHEN AND HOLMES.

Dr. Wm. H. Thompson, New York City, by invitation, opened the discussion. He said that the subjects for discussion that had been initiated already, by these two papers, were so numerous that the Section might spend not only the rest of the afternoon, but a day or two in going over them. He, therefore, would refer to but one or two points. In the first place, when we speak of tuberculosis, it appears as if we have in mind two almost distinct diseases. The first is uncomplicated tuberculosis, the second is complicated tuberculosis. In the former, the tubercle bacillus is not associated with other bacteria. This condition we do not find in the lungs, but we do find it in serous membranes, the peritoneum, for example. Take a case of general tuberculosis of the peritoneum. He had seen the abdomen opened by surgeons and they had found the peritoneum a mass of tubercles; they had then closed it up, for the patients to die, but to their surprise the patients got well. This is not the course of pulmonary tuberculosis. One reason for this is that we have the infection in a tissue or organ that is never at rest, but twenty or thirty times a minute, it moves in the respiratory act. Just as a sore on the leg, if it were rubbed twenty or thirty times a minute, night and day, it would not get well. So if you have an infection with tuberculosis, the constant movement and irritation sets up an ulcerative process and there is secondary infection with pus organisms. Further, wherever the ulcerated process occurs, there is an opening for additional tubercular infection. There are, therefore, in some parts of the body, simple infections with the tubercle bacilli, but in the lungs there is always compound infection. Another point is that the tubercle bacillus can have no antitoxin, because its duration is not self-limited. In acute pneumonia, on the contrary, you have a condition which passes through its course in a few days and then ceases its activity; not so with the tubercle bacillus, it has an unlimited life. The speaker said that he was the first physician in New York who had a supply of Koch's tuberculin. He never personally had any faith in tuberculin, but had a great deal of faith in diphtheria antitoxin. Diphtheria being a self-limited disease can have an antitoxin, but tuberculosis can not. Professor Loomis, who followed him in hospital service, also had doubts as to the specific effect of tuberculin. An important point in pulmonary tuberculosis is to know the time when infection takes place. You see a man 20 or 30 years of age, with signs of beginning pulmonary tuberculosis. When was he infected? He might have become infected as a child, when he was 1 year old, and the disease for some reason did not find a favorable moment for development until twenty or thirty years had passed. This is now the general view of the pathologist. About two years ago there was a discussion at the Pathological Society of London, published in six numbers of the *British Medical Journal* and *The Lancet*, in which the fact was brought out prominently that there are many cases of infection in childhood, but that it does not develop into pulmonic tuberculosis usually until in adult life. Hirsch, who found in adult autopsies more than 75 per cent. which showed tubercular lesions, is of the opinion that the entrance of the tubercle bacilli into the body is usually with the milk, as in a child. This has been demonstrated over and over again. The tubercle bacillus finds its nidus with the serous membrane, and keeps on doing its specific work, and emaciation and other physical changes finally result. What do we mean by emaciation? It is not a simple loss of fat, but it means a loss of every part of the body, except the nervous system, which never emaciates. The peculiar tubercular facies, or physiognomy has been referred to. He would recognize it at a glance. Every long bone is thin, the muscles of the neck are ribbon-like; every rib is long and thin, the hands and lips are bloodless—therefore, before examining the chest, you recognize that you have to deal with a condition in which there is a deposit of tubercle. That is in an adult, and these changes of development have been brought about because he has been suffering from that very thing since early life. He fully believes that we can do almost nothing against pulmonary tuberculosis. He feeds his patients fresh meat, gives them cod-liver oil for its influence on nutrition, and gives them iodin, arsenic, for the same reason, to improve the nutritive powers. But when he has done that, he asks what he has done with the tubercular infection per se? If the patient has a soft pulse, he gives him nitroglycerin. He needs protection from pus organisms. Have we any remedy for this? Yes. Oxygen. Turn the patient out-of-doors. There is one remedy that will aid, that is creosote, if the stomach bears it. Other remedies may be employed for special needs, but none of them are of more importance.

Dr. J. N. Upshur, Richmond, Va., believes the cardinal principle in the treatment of tuberculosis is to preserve the integrity of the stomach, so as to antagonize action of these agents which cause loss of nutrition; further, that the great means to promote this action of the stomach are abundance of sunlight and fresh air and allowing only such foods as are easily digested. And in this line, the fewer drugs you put into the stomachs of patients, the better for them. He considers no drugs of use except in the line of improving nutrition of the body. He has faith in strychnin, because it strengthens the heart's action, increases the general integrity of the muscular system, and because it puts the patient in a position where he can take best advantage of the fresh air and sunlight. One of the most important questions is that of environment. He referred, in illustration, to the present condition of the southern negro, in contrast to his ante-bellum condition. Then his black greasy skin and well-nourished body, showed that he worked in the country where he got the most fresh air. He had an abundance of corn bread, of fat bacon and fresh vegetables. He lived in well-ventilated apartments, and was obliged to keep early hours. The speaker remembers these happy creatures, whose songs were heard all over the land. Their health was an object of intelligent care, at that time, and they were rarely sick, and, when ill, they were cared for. But now the picture has changed. The environment of the negro is different. He moves to the town. He lives upon partly-tainted meat and stale vegetables, and eliminates from his diet corn bread and bacon. He is overcrowded in his sleeping-rooms, his habits are irregular, and he often uses alcohol to excess. Now, what is the result of this contrast? Before the war, pulmonary tuberculosis in the pure negro was unknown. At the present time it is so general that the race is becoming decimated. It is increasingly frequent and of itself will solve the social race problem. The speaker differs with Dr. Solis-Cohen in the recommendation to use nitroglycerin. It causes prostration and nausea, and a soft pulse, with dilatation of the retinal vessels; but the cardinal principle is that the weak suffer from it more than the strong. Moreover, it reduces the oxygen-carrying power of the blood and interferes with the function of the red blood-corpuscles. The nitroglycerin produces its effects by paralyzing the blood-vessels and reducing blood-tension. What is desired, on the contrary, is to obtain increased circulatory power to improve general nutrition. Strychnin is the preferable agent. Nitroglycerin is positively contraindicated in a condition like pulmonary tuberculosis in his opinion.

Dr. S. Solis-Cohen said that he had been misunderstood with regard to the use of nitroglycerin and that he does not consider it applicable in the late stages when the pulse is rapid and of low tension. On the other hand, in the prebacillary stage, when improved circulation, local and general, is necessary for nutrition, it is extremely useful. He does not rely on drugs and holds the view that there is no true specific for consumption, but in certain conditions, as stated certain drugs are useful.

Dr. A. Mansfield Holmes—It is a recognized fact that the best results are obtained in the treatment of pulmonary tuberculosis when we attack the disease in the early stages: whether we discover the bacillus or not, it is very vital to the patient that we recognize the disease early. It was not the purpose of my paper to claim that it is possible to detect the very moment when the bacilli find a lodgment in the tissues. I wish to lay special stress on the point of localizing the disease at this early period as offering the greatest opportunity for therapeutic measures and the favorable moment for successful treatment.

THREE CASES ILLUSTRATING CEREBRAL COMPLICATIONS OF OTITIS MEDIA SUPPURATIVA.*

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It is not to be wondered at that, however brilliant the diagnosis may be, and however skilfully the operation may be done, success does not always attend work along the line of otitic cerebral surgery. The localization of the lesion is not always clear. Lesions may exist other than those made clear through the grouping of symptoms, and the pathological changes exposed may have progressed so far as to preclude the possibility of successful issue, all of which are independent, in the light of our present knowledge and skill in diagnosis and surgical intervention. It therefore becomes incumbent upon us to report not only our successes, but more imperative to report our failures, as through them not only we, but likewise others may profit. I fear that we are too prone to report our successful cases and too apt to forget our failures. To be sure it is no disgrace for one to fail in relieving a helpless or moribund patient, but nevertheless the human mind is so constructed as not to wish to subject failures to the close scrutiny of criticism. I shall report to you two fatal cases of sinus thrombosis and one of cerebral abscess.

Case of Sinus Thrombosis, No. 1.—On Sunday evening, Nov. 18, 1898, I was requested to see in consultation a patient who had been sick for six or seven weeks with chills and fever, and was told that the reason for my being called was on account of an otitis media purulenta, which had been latterly thought to have some relationship with the general condition. The patient was a man of 60 years of age, probably the average height, and well nourished. The physician in attendance gave me the following history. The patient had had a suppurative otitis of the right ear for many years, and during the past year, under the care of Dr. W. K. Butler, a polypus had been removed from this ear. The patient had been sick about two weeks previously with symptoms that simulated those of malarial fever. He had had chills followed by fever, the temperature rarely going above 101. The sweating stage was usually very pronounced. There had been almost constant headpain, located over the parietal. Several days before calling me in attendance he developed vertigo, and the Doctor noticed that there was tenderness over the mastoid region. On examination of the patient, I found him apparently mentally normal. He recalled incidents and answered questions intelligently, and in various ways showed perfect cerebration. There was pain noted on deep and firm pressure over the antrum mastoideum, and tenderness of an exquisite character on slight pressure over the point of exit of the emissary vein. The jugular region appeared quite normal, although there was some tenderness on pressure along the vein high up in the neck. The patient complained of intense vertigo and persistent headache. The facial expression was bad, and the skin sallow. The tongue was dry and foul and the bowels constipated. The pulse was good in volume, but slightly irregular. The pupils reacted normally, and there was no evidence of facial or other paresis.

Examination of the ear elicited no noticeable swelling or redness about the mastoid. The auditory canal was filled by an offensive pus, which was cleared away by syringing. Inspection showed that there was complete destruction of membrane, with exfoliation of ossicles. A small granulation was noticed at the posterior superior margin of the meatus. I confirmed the Doctor in his fears of intracranial complication, and gave as my opinion that we had before us a case of sinus thrombosis of the right sigmoid sinus and advised operative intervention. An ice bag was applied to the mastoid and calomel given. The next day the patient was seen again, and we found he had had a bad night, slightly delirious, and had a severe chill, with a temperature of 104. The mental condition was not quite as clear as on the previous evening. There were doubtful evidences of aphasia. Pulse was intermittent. The patient was immediately removed to the Columbian University Hospital and operated on at once.

At the time of commencing the operation the patient's condition was bad. A free incision was made through the soft tissues, as in the usual mastoid operation, and the mastoid well exposed. From the superior end of the incision, a second incision was carried backward almost to the occipital protuberance. The flaps were dissected up, exposing a roomy field. The mastoid was opened through an ivory-like process. Just before reaching the antrum, a nasty, offensive, syrupy, currant-colored fluid was exposed. The mastoid was cleaned up into the antrum and the exposure of the sinus was immediately resorted to. With the aid of rongeur forceps, the sinus was exposed throughout its whole length. The walls were found to be gangrenous, varying in color from a pasty white to green and black in spots. The wall was opened and the vessel found to be filled with a nasty, broken-down clot. The curette was used, and by following up the blood-clot posteriorly within the sinus wall the circulation was restored in this direction. The blood was stilled by a packing of iodoform gauze. Dr. Van Rensalaer then exposed the jugular in the neck. The vessel was found to be collapsed, and the clot therein had undergone organization, so that it was almost impossible to separate the walls of the vessel from each other or from the clot. The vessel was removed. No circulation was established from below. The wounds were closed and dressed and the patient placed in bed. The patient showed only slight shock after the operation and his general condition was about the same as previous to the operation. After recovering from the ether he was as rational as in the pre-operative period for several hours, when he lapsed into a semicomatose state with muttering delirium. The patient died twenty-six hours after the operation, as a result of the intense sepsis. During the period following operation and before death he had two distinct chills, with a temperature ranging from 102 to 106. Autopsy was not permitted.

Case of Infective Thrombosis, No. 2.—On Nov. 25, 1899, there was admitted into my service at the Episcopal Hospital, John J. Murphy, white, aged 25, a farmer by occupation. This man had had during the previous summer an otitis media suppurativa, which ran its usual course until the middle of October, when there was developed considerable pain back of the ear over the mastoid region. This pain continued for about two weeks, when there was added to it another symptom, a swelling over the mastoid, which gradually increased until the patient presented himself at the hospital. As will be seen by the history of the patient, he evidently had a mastoid abscess of about six weeks' duration when he entered the hospital. The mastoid swelling was intense and extended up to near the vertex of the skull and well down to the tip of the mastoid, showing a great, boggy, fluctuating mass. His general condition was bad, his temperature 100.8, pulse 70, respiration 18. His skin was sallow and he presented a decidedly emaciated appearance. I saw him first on November 25 at 8 p.m. He was operated on the next day at 4 p.m. This was the ordinary mastoid operation, and the whole cellular structure of the mastoid was found to be completely destroyed. At the time of the operation there was a slight inflammatory swelling in the neck just below the tip of the mastoid. As is often the case, where there is no fluctuation, this cervical cellulitis subsides after the opening of the mastoid cells and the evacuation of the pus, so it was therefore decided not to interfere with this condition. The patient continued in good condition until November 30, when the first dressing was made. The temperature that morning was 102.6, the first decided elevation of temperature since the primary operation. When the dressings were removed it was noticed that the induration in the neck had broken down and formed a large abscess cavity. A free incision was made, extending down over the neck to a point on a line with the upper border of the larynx. This was followed by the evacuation of a great amount of pus and broken-down tissue. The pus cavity extended up under the lower jaw and back under the trapezius muscle. The patient's condition continued along fairly favorable, with nearly normal temperature, varying from 98 to 99.6, until December 15. At this time there was noticed a commencing induration in the anterior portion of the temporal region. The patient was then etherized and this condition was opened up, when it was found that deep down under the temporal muscle there was a collection of pus. On pressure over this boggy mass, I noticed that the pus issued, not between the temporal fascia and the periosteum, but into the depths of the wound in the mastoid itself, showing that there was a direct connection between the pus cavity in the temporal region and the mastoid cells, or in other words, that the pus was evidently entirely within the bony walls. I therefore decided to continue the incision from the anterior portion of the temporal region directly backward to my mastoid wound, and upon opening this flap and throwing it back I found that just above and in front of the zygoma there was a carious perforation of the outer table. I then inserted a probe and found that it would extend well up through the squamosa into the parietal bone between the outer and inner table. It is quite evident that I had a decided case of osteomyelitis. I, therefore, with a rongeur cleared off the whole outer table of the squamosa and the lower half of the parietal bone until I came to healthy osseous tissue. This was followed by a curetting of the outer surface of the inner table of the squamosa and parietal bone. The patient's condition then continued fairly well, with a slight septic temperature, varying between 99 and 100 for four or five days, when the temperature again dropped to the normal and so remained, the patient apparently improving in his general condition during this period. On December 25 the temperature again showed a slight elevation, running up to 102.2. At this time he complained of pain in the occipital region and showed slight indisposition to sleep. On December 26 the temperature ran up to 104.2. At this time there was noticed a collection of pus well back in the occipital region. The abscess cavity was opened, and an incision was carried forward, connecting with the original mastoid wound. It will be seen by these frequent small abscess formations and the osteomyelitis which developed in the squamosa and the parietal bone, that the patient was in an intensely septic condition. The patient's condition then continued fairly well, the temperature dropping back to the normal, and with improvement in his general condition again, until January 2, when another alarm was sounded by the temperature jumping up to 102.4. I watched carefully for any evidences of further infection on the surface of the head and neck, and could see no reason for suspecting pus about the wound in the neck or elsewhere in contiguity to the wound. There was practically no pus issuing from the wound and it was granulating up in excellent style. At 11:30 on January 3 the temperature ran p to 104, and at 1:30 of the next morning, January 4, it reached 105.2. This was followed by profuse perspiration. The same day at 3:30 he complained of chilly sensations and nausea, the chill lasting twenty-five minutes. The temperature ran up to 104.8. On the next day, although his temperature remained normal practically throughout the morning, I decided that the patient had evidently a septic sinus thrombosis involving the sigmoid sinus and that immediate operative interference was demanded. The operation was done in the afternoon of Jan. 5, 1900. The old wound was opened up and an opening made into the osseous structure, which was found to be very dense over the sigmoid sinus. The sinus was exposed at the knee and carried backward an inch or more and opened up well down toward the bulb. The walls of the sinus were tense and slightly discolored, and upon opening it was found to be filled with broken-down clot. I curetted out down to the bulb and obtained a return circulation from below. On curetting backward, toward the torcular, at first a well-organized clot was brought out, then a softened clot, and going back as far as I could, nearly to the torcular, I could not get a return circulation in this direction. It was deemed best not to interfere further, and after thoroughly cleansing out the wound, the patient was put to bed. On the next day the temperature did not rise above 100. The wound was irrigated daily. The second day after the operation the temperature was 99.8 in the morning and 99.6 in the evening. The third day the patient was eating, sleeping, and feeling better than at any period during the whole stage of his illness. On January 9 the temperature was 100 in the morning, 100.2 in the afternoon, and 99.8 at night. The bowels, which for the week previous had been very loose and attended with a good deal of mucus and bloody discharge, had now returned to the normal condition and had been so since the first day after the operation. On January 10 the temperature did not rise above the normal. This evening, for the first time since the operation, the patient complained of pain in the head again. This pain was more general than at any previous stage of his illness. On January 11 the patient's morning temperature was normal, the evening temperature 100.2. The patient felt, slept and ate well, and had large, well-formed movements. On January 12 the temperature was 100 throughout the day until evening, when it went up to 100.8. The patient appeared very restless and could not sleep; seemed to be growing anxious about his condition and extremely irritable. On January 13 he suffered a great deal of pain in the head; felt chilly; temperature throughout the day was 102.2. Irritability was very marked. The patient vomited a quantity of green fluid. January 14, temperature was 103.8. He suffered intense pain in head; was extremely restless, irritable, and could hardly be kept quiet in his bed; complained of feeling badly and uncomfortable. Urine was passed involuntarily. There was no evidence of muscular paralysis or loss of sensation. Stimulants and food were refused. It was evident that the patient was developing or had developed a meningitis, and there seemed to be no apparent hope from further operative intervention. The case went from bad to worse until January 18, when he died. Vain efforts were made to obtain an autopsy, but the family absolutely refused it.

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* Presented in a Symposium before the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

CEREBRAL ABSCESS, CASE No. 3.—On September 15, I was consulted by a gentleman 63 years of age, who had, during a visit to Atlantic City, while in bathing, developed an abscess of the right ear. This continued under treatment until September 15, when he called upon me. At that time, on examination of the ear, I found a small perforation of the membrana tympani at the posterior superior quadrant. His general condition was good and there was no tenderness or other evidences of involvement of the deeper structures of the auditory apparatus. I watched the case for several days, treating it in the usual manner, and then, as the drainage did not seem good, I enlarged the opening in the membrana tympani. During this time, and until about October 10, the case progressed favorably, with a greatly diminishing amount of purulent discharge, until about October 15, when there was absolute cessation of purulent discharge with closure of the opening in the membrana tympani. There was considerable impairment of the hearing and the patient was kept under observation and treatment in order, if possible, to bring the hearing up to normal. About the first week in November I noticed that the patient was a little more excitable than at any previous period of the treatment of his case. On about November 12 I became so impressed with his nervous state and his tendency to become excited and the alteration of his general manner that I consulted his family in regard to these facts to elucidate if they had noticed any alterations in his general demeanor. They rather assured me that he was about the same as he always had been. This continued for a period of about four or five days, when the family began to notice those things to which I had called their attention. He became morose, with a tendency to have crying spells, getting excited on slight provocation and unusually irritable to his wife and children. For about five days before this, that is, about November 7, the patient called my attention to an intense frontal headache, which had persisted now for about a week or ten days without interruption, and seemingly situated over the supraorbital notch. At this time I thought it best to confine him to the house and to bed, and on November 18 I first noticed that the patient showed some evidences of amnesic aphasia. I then told the family that I feared the patient was developing an intracranial complication, and at my suggestion, Dr. A. B. Richardson, superintendent of the Government Insane Asylum, was called into consultation. With Dr. Richardson, I went carefully over the case, and he was rather disinclined to accept my views with regard to the possible existence of a cerebral abscess. The temperature had been normal throughout. There was no alteration in the circulation nor in the respiration. There was no motor paralysis nor alteration of sensation and the reflexors were all normal. Examination of eyeground was made by Dr. Shute, but on account of the existence of a cataract, it was impossible to learn anything from this investigation. On the 23d this aphasic condition had increased a great deal, his irritability had become more marked, and there was elevation of temperature for the first time, the temperature registering 99.5. The pulse showed a slowing, dropping five beats from the normal with this patient. Dr. Richardson was again called in consultation on the 25th. We then went carefully over the case again, and we noticed that besides the amnesic aphasia there was also commencing evidence of word-blindness. There was still no alteration in sensation or motion, the patient locomoting with perfect ease. Dr. Richardson then became of the same opinion with me, and located the abscess in Broca's triangle. The patient was taken to Providence Hospital, and on the following day at 2 o'clock he was operated on. The headache had subsided about four or five days before the operation. I first did the preliminary mastoid operation, opening up into the mastoid cells without finding any evidence of a diseased condition therein. I then exposed the skull in the usual manner and took out a button of bone about an inch and a quarter above the external auditory canal. On exposing the dura there was distinct bulging and absence of pulsation. I then felt tolerably certain that there was pus within the cranial cavity. I first went in with a large-sized aspirating needle in the region forward and inward, where we had expected to find the pus. I then went inward and then downward and inward, and then backward. This was followed by the use of a grooved director in the direction that had been previously used, without the detection of any pus. Dr. W. P. Carr, who assisted me, was then given free rein in the cerebral cavity. He also failed to locate pus. At Dr. Foster's suggestion, the wound was enlarged backward, so that a better opening could be obtained, so as to get into the occipital lobe of the brain. Probing back in this direction also failed to evacuate pus. We all felt that sufficient exploration had been made, although we were confident that there was pus within the cerebral contents. The patient's condition remained about the same for twenty-four hours; on the second day he relapsed into a semi-comatose condition, and died on the third day. On post-mortem, a small abscess about the size of a hickory-nut was discovered on the mesial side of the uncinate convolution of the temporo-sphenoidal lobe. It is almost impossible to conceive how this abscess was missed during the probing. Of course, many reasons can be surmised as probable causes. On examination of the brain, which I have brought with me, it can be seen that the opening was made in a direct line with the abscess, and only about an inch and a half from the outer wall of the capsule of the abscess. In all probability, during one of my manipulations, the instrument in use must have entered the abscess cavity, the pus being either too thick to flow, or the softening of the contents of the abscess not being sufficiently advanced to admit of its readily passing out through the opening made.

With regard to operative intervention in septic thrombosis of the sigmoid sinus, early diagnosis and prompt intervention is the keynote to a successful result. The operation in itself is not a dangerous one, and should not be attended with much more shock and disturbance of the general system than the ordinary mastoid operation. Unfortunately, in this condition in the formative stage of infection, we have no symptoms or groups of symptoms which would lead us to suspect that a septic phlebitis is about to take place. Usually the first positive symptom manifested is that showing that the general system is infected, as is evidenced by the pyemic rigor and fever curve. Occasionally we may have slight fever curve preceding the pyemic chill for several days, but this does not point to any particular condition, only serving to put us in the expectant state. Here it is well to bear in mind the observation of Ernest Leutert in this connection, and that is that continuous fever lasting for several days after the subsidence of the acute symptoms in acute otitis suppurativa, wherein there is free exit to the purulent discharge, but more *particularly in* the chronic otitis suppurativa, without acute exacerbation of symptoms or retention of pus in the middle-ear cavity, is almost an exceptional symptom of a forming sinus thrombus. In the early stages of thrombosis the local symptoms do not indicate more than a possible mastoiditis, even if they indicate that, and if thrombosis is detected, it is only done during the mastoid operation. Gerhardt's symptom is one that may be of aid to us during this stage of the affection. What is particularly desired in connection with the symptomatology of *infective sinus thrombosis is careful scrutinization of all* mastoid cases with regard to their symptoms, in order that in those in which there follows thrombosis, or in which it is present at the time of operation, although undetected, we may by so doing pick out a group of symptoms which would render probable a diagnosis of infective thrombosis at this early stage of its formation. During the second stage, characterized by the formation of the thrombus and its commencing disintegration, the symptoms are usually so characteristic in most cases as not to escape the detection of the skilled aurist. While *it is true that the aurist would invariably diagnosticate* a thrombus at the first rigor and chart reading, it invariably is not so in the case of the general practitioner. We must recognize the fact that the general practitioner is, *and has a right thereto, treating very many cases of* chronic and acute suppurative otitis, but unfortunately he does not recognize the possibility of these cases as the aurist does, nor is he prepared to recognize the import of distinctive symptoms of grave intracranial lesions. We can not too often call to the attention of the general practitioner the fact that the occurrence of a chill, a *high temperature and a sweat in a patient suffering with* a suppurative ear is not an evidence of malaria, but is a symptom of extreme gravity, indicating an involvement of the sigmoid sinus, and which should be given immediate operative attention. In the present day no one practicing otology hesitates at operating at once upon an exposed diseased sinus, or in exposing and opening the sinus when the symptoms indicate that an infective thrombus is forming therein. The technique is recognized as comparatively simple, and all are universally a unit, excepting with regard to the treatment of the internal jugular. One can not but accede to the fact that the line of safety lies in the ligation of the jugular. Even though a return circulation be obtained, this does not prove conclusively that the walls of the jugular are not already involved in the phlebitic inflammation, and that thus below our seat of operation and apparent safety we may still have a source of general systemic infection. That *cases recover without jugular* ligation does not prove that many more might have been saved had jugular ligation been resorted to in all cases. The ligation and excision of the jugular does not add much to the gravity of the case, and may add greatly to its future welfare. Whether *the ligation should be* resorted to previous or subsequent to the exposure of the sigmoid sinus depends largely upon the condition manifested at the time of operation.

With regard to cerebral abscess, *the diagnosis is not always an easy question,* although at times, owing to its *distinctive localization and non-involvement of other* structures, the signs are clearly marked. Subdural abscess gives rise usually to no distinctive signs until the *meninges are involved.* The early and most characteristic symptoms of *cerebral abscess are those of alteration* of the general demeanor of the patient, the patient becoming anxious, irritable, morose, and semi-hysterical. *I should look upon this symptom as an exceedingly suspicious sign in a person affected with a suppurative ear.* Another symptom which I think can not be too often called to our minds is the evidence of aphasia, especially *in cases of left-sided otitis in right-handed persons.* As the usual seat of lesions in otitic cerebral abscess is in the temporosphenoidal lobe of the brain, and as we *know that the localization of the speech center is not limited to one small area of the brain,* we can readily understand how an abscess anywhere in the temporosphenoidal region is apt to involve some of these centers or some of the associate fibers, giving rise as its *earliest manifestation, to some alteration in the function* of speech. Unfortunately the speech center is not a simple affair, localized in a single center, but rather a *complex thing, resulting from the action of many brain* centers. It extends from the Rolandic region backward into the temporal region and upward as far as the angular gyrus in the occipital lobe. While we see that the presence of aphasic symptoms in a person suffering with suppurative otitis is quite a positive sign of cerebral abscess, yet it does not give us the positive seat of the lesion or its localization. The most probable seat of such an abscess is in the white matter of the under surface of the brain in the region of the uncinate or third convolution. The seat of such an abscess would be *in a direct line inward, varying from an inch to an* inch and a half in depth from an opening made in the skull cap one inch above the external auditory meatus.

SUPPURATIVE TYMPANO-MASTOIDITIS IN CHILDREN.*

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When you did me the honor to invite me to address this Section I thought tympano-mastoiditis in children might be an appropriate subject to open a discussion on that part of otology, which, at present, receives the greatest attention—the surgery of the tympano-mastoid.

Like others, I have found the affections of the tympano-mastoid particularly difficult to manage in children. *Not only the difficulty of the subject, gentlemen,* but also its paramount importance, determined me to submit some remarks for your consideration. As to the importance I need only repeat what has often been said, viz., that he who has no hereditary tendency to deafness and guards his hearing organ safe through all the diseases of childhood, is almost immune from ear trouble *in after life. What causes the management of* ear disease in childhood to be so difficult and irksome? This question leads one to the etiology of ear disease. In order to learn at what age cases of serious ear disease are most numerous I have tabulated the mastoid operations performed on children under 8 years at the New York Ophthalmic and Aural Institute, during the last six years. They are 39 in number. Of these 7 (18 per cent.) occurred in the first year, i. e., from birth to the completion of the first year; 9 (23 per cent.) the second year; 3 (7.6 per cent.) in each of the third, fourth, and fifth years; 4 (10.2 per cent.) in the sixth year; 5 (12.8 per cent.) in the seventh year; and 5 (12.8 per cent.) in the eighth year. Of the children who had mastoid abscess in the first year, 2 were two months old; 1 four months; 2 seven months; 1 ten months, and 1 eleven months. This classification shows that the greatest percentage was in the second year; then came the first which gives the first two years of life 41 per cent., against 59 per cent. in the six subsequent years. As to the deductions suggested by these numbers, I dare say that they are not conclusive, because the material of a public clinic deals chiefly with patients that are more or less transportable. Children in the first year of their lives are not so movable as those that can walk. Yet, small as the above numbers are, they demonstrate a preponderance of this disease in the earliest childhood over following years.

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* Presented in a Symposium before the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

The grave ear diseases, I mean those that show mastoid affections and their complications, are not only more frequent, but also more dangerous, and more difficult to treat in childhood than in adult life. What is the cause? I think we are all agreed that the cause lies in the anatomical conditions in the infantile ear and its adjacent parts, the nasopharynx. Lodged in the nasopharynx, the great originator of ear disease, is the belt of adenoid tissue in the upper part of the pharyngeal cavity which, among other parts, encroaches on the Eustachian tubes and even dips somewhat into their mouths. It would be carrying owls to Athens were I to say more about it before this Section. The peculiar conditions of the auditory organ are responsible for the easy transportation and pernicious development of infective material from the nasopharynx into the ear. The anatomy of the ear is difficult to master. It is not only most intricate in its finished state at the age of maturity, and later, but it is so undeveloped at birth, and grows so slowly that the ear surgeon should make a special study of the condition of the ear nearly every year in the first decade of his patient's life.

The shortness and comparatively large caliber of the Eustachian tube present favorable conditions for the ready admission of material from the nasopharynx into the tympanic cavity. This accounts for the frequency of tympanic disease in children, but also for the favorable condition of spontaneous liberation of serum, phlegm and pus from the middle ear back into the nasopharyngeal cavity and thence into the respiratory and digestive tracts. The easy inflation of children's tympanic cavities, even without the act of swallowing, is well known.

The particular importance of an early diagnosis and treatment of suppurative otitis media in children resulted from the anatomical conditions, viz., a resistant drumhead, easy transfer of infective material from the nasopharyngeal cavity into the tympanum, attic, and both outside and inside the skull. As there are not yet any mastoid cells, but pneumatic cancellous tissue in the base of the squama, we see the abscess rather above than back of the ear. In some cases, these abscesses, characteristic and well developed, disappear over night and the patient gets well quickly and permanently. Where have they gone? They have passed through the large infantile Eustachian tube into the throat. When we evacuate them, by operation, we must not plunge a knife boldly into them, down to the bone, as we may do in adults, but make the incision carefully, layer by layer, bearing in mind that the bones of young children are soft and connected with one another by membranous sutures, more or less broad, all of which can be clearly seen on the skull of a 6-months' old child. The easy path which, in another case, leads the pus into the middle cranial fossa, with its fatal consequences, is just as plainly demonstrable. The masto-squamous and petrosquamous sutures as ready channels of morbid material are now generally known and appreciated. The petrosquamous sinus of children which in some cases does not obliterate very early, exceptionally remains persistent, is seen on the inside of the skull, passing through a foramen which outside is situated behind the glenoid fossa and the tympanic ring. This sinus, well described and depicted in William Macewen's inexhaustible book —in Figs. 1 and 2, opposite page 2—has of late drawn the attention of the otological world through a case, published by Dr. Cleveland, of Philadelphia.[1] Mr. Arthur Cheattle, of London, has made "une étude approfondie" on this subject, exhibiting 6 or 7 skulls where the foramina were well seen, at the unique museum of the Sixth International Otological Congress, at London, last summer. He gave a good description of that sinus, acknowledging, as the speaker does, his gratitude to Dr. Cleveland for having given him his first knowledge on this not well-known subject.

SOME OBSERVATIONS IN MASTOID OPERATIONS.*

A. W. CALHOUN, M.D., LL.D.

ATLANTA, GA.

So much has been written upon this subject that it would seem that little remained to be said; yet the gravity of mastoid disease is such as to promptly arouse our attention and apprehension, and lead us in each instance to vigorous treatment, and therefore every observation should be of interest.

The disease, in certain seasons of the year, often prevails in almost epidemic form, and again occurs at such wide intervals as to attract notice by its infrequency, but I dare say no case ever presents itself to any one of us without causing us the deepest concern for the welfare of our patient. The anxious, distressful countenance of a typical mastoid subject at once elicits our earnest consideration and demands our most thoughtful care and treatment. The possible unfavorable result in each case brings before us vividly the fact that we have a grave disease to deal with, and that we must act promptly and decisively.

During the last year I have treated twelve or fourteen cases of mastoid disease, varying in age from 8 to 50 years, and the operations I propose to speak of were made while attending these and previous cases, running back through a series of years. I do not intend to recite details of each individual case with accompanying symptoms, but will say they were just such as we all see—some very severe, some less so—but all requiring operative measures more or less radical; most of them necessitating the removal of the outer wall of the mastoid bone and the thorough curetting of the cavity, and all fourteen making good and complete recoveries.

Reviewing these cases, and studying them and the disease as it occurs in my section of the country—Middle Atlantic States—has led me to the following conclusions:

In the first place, I would call attention to the infrequency of mastoid disease as compared with the total number of cases of acute and chronic middle-ear suppurations. It has occurred to me that we have more than our proportion of middle-ear suppurations, running their course and getting well, or going over into the chronic state and becoming often a fixture with the individual. But even with a large number of these latter cases the comparative rarity of mastoidal complications has been conspicuous and a matter of observation. On the contrary, in other sections of our country I learn from medical friends that the disease is very frequent, occurring much oftener in an equal number of chronic and acute middle-ear suppurative inflammations. This has been particularly the case during the past winter in many of the large eastern cities, where, as a sequel to la grippe, mastoidal complications have prevailed to an alarming degree. Doubtless, the mildness of the climate will furnish the explanation of the small number of cases, as compared with their frequency in other sections having a harsher climate. The observation to which I would like to call your attention is that while mastoiditis is more frequent in some sections than others, it is yet an uncommon complication everywhere when the vast number of the acute and chronic suppurations of the middle ear are taken into consideration. One would naturally expect to find a large percentage of such cases, after viewing the intimate relationship of the tympanic and mastoidal cavities, remembering the violence of the inflammation in the former cavity.

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[1] Archives of Otology, xxiv, p. 236, 1895.

The mild type of the mastoid inflammation in the cases treated during the recent winter also deserves attention. In each the usual symptoms were present, viz., fever in most cases, but absent in some; the characteristic swelling, not always great; pain, and the ever-present distressed countenance, etc. Owing, doubtless, to climatic influence, there has been marked freedom from cerebral and other dangerous complications. This has not been the history of the disease, as recently occurring in more northerly sections. In a great majority of the cases the damage to the hearing has been slight, the patient regaining much if not all the hearing lost as the result of the mastoid complication. This is a matter of surprise when one recalls to mind the changes and disturbances which take place from the inflammation and the operative procedures within the mastoid cavity.

Age has played no rôle in the series of cases more recently in my hands, the disease occurring about equally often in children and adults. I know no reason why the negro should be exempt from this affection, but I recall but one case of mastoid inflammation in the negro. I have had abundant opportunity to study the many diseases of the black race, and after a large experience can state that the negro is much less susceptible to middle-ear diseases than the white race; and being thus less susceptible it follows that mastoidal complications should be very rare with him.

I have observed sometimes very serious mastoid disease without any such marked symptoms as swelling, pain, etc., and but little abnormal temperature. Recurrent slight acute attacks would finally lead to the decision that operative measures were needful, and the operation would develop the fact that very serious inflammation existed in the cavity. In a case recently operated, I found the inflammation and the destructive processes in the cavity out of all proportion to the external and constitutional symptoms. Cases also now and then present themselves where the mastoid inflammation exists apparently without middle-ear involvement. There must have been an acute otitis media, with an extension of the inflammation into the mastoid cells, but no suppuration of the middle ear had taken place. Such a case was operated upon, in which the patient had never complained of pain, impaired hearing, suppuration or other middle-ear symptoms, yet evidences of mastoid inflammation were so pronounced that a radical operation was deemed necessary. It is an error to suppose that every case of mastoiditis is preceded by suppurative otitis media, as experience teaches us the contrary.

Again, there can be no doubt of the tendency to spontaneous and complete recovery in many cases of the disease of even severe types, for in some of these reported an operation was refused and yet a perfect cure was attained. A good result is not infrequently reached only by resorting to the Wilde incision. Such recoveries occur often enough to cause one to pause and consider whether the severe and radical operation for mastoid disease is not frequently made when a little delay might have led us to much simpler and just as satisfactory treatment. I would not like to be considered as advocating anything but prompt and thorough surgical treatment in well-marked typical acute or subacute mastoiditis, but there are cases where intelligent delay and milder measures yield just as good results as are invariably produced in the more violent cases by the most radical surgical treatment. The fact I wish to lay stress upon here is that not in every seemingly severe case of mastoid disease is it necessary to rush to radical operative treatment, but that not an inconsiderable number make good recoveries under milder measures. One of the chief advantages of the surgical treatment is the rapid and complete cessation of the middle-ear inflammation, discharges, etc., in a large majority of cases.

My experience has led me to the conclusion that such radical measures as the Stacke operation are seldom required, the disease yielding readily and satisfactorily to the less severe operative procedures; indeed, my records do not show in a single instance that it was needful to resort to the severer operations.

To recapitulate, my conclusions, based upon a large number of mastoid operations, are:

1. Infrequency of mastoid disease as compared with the large number of cases of suppurative otitis media.
2. Mild type of the disease, freedom from cerebral and other dangerous complications.
3. Comparative exemption of the negro race.
4. Presence of serious mastoid disease without marked outward symptoms, fever, etc.
5. Presence of mastoid disease without apparent middle-ear involvement.
6. Not every case requires radical operation.

[The discussion will appear with other papers of the Symposium, to be printed in succeeding issues of The Journal. —Ed.]

Malaria and Mosquitoes.—Dr. Dionisi, of Rome, has involuntarily contributed another example of the infallibility of the transmission of malarial infection by mosquitoes. A number of which he was cultivating for purposes of research escaped from their cage and stung him. After a few days of incubation he was prostrated with a violent attack of typical estivo-autumnal fever in the middle of January.

DIFFERENTIAL DIAGNOSIS BETWEEN CHICKENPOX AND SMALLPOX.

HEMAN SPALDING, M.D.
Chief Medical Inspector, Chicago Health Department.
CHICAGO.

In conversation with an eminent dermatologist recently, he made the remark that he had never seen chickenpox in an adult. I thought it a remarkable statement in so experienced a man, inasmuch as I had seen a large number of such cases while connected with the Department of Health of Chicago. I subsequently noticed a statement published in the *Cleveland Journal of Medicine,* by Dr. William Thomas Corlett, to the effect that he had never seen a case of chickenpox in an individual after puberty. A little later The Journal of the American Medical Association editorially said that chickenpox in an adult was so rare an occurrence that "it might be a safe rule in some respects to call every case in an adult smallpox that one feels tempted to diagnose as varicella."

An adult with a supposed case of chickenpox either has or has not chickenpox. If he has it, he should not be treated for something else. Chickenpox, like other eruptive diseases, as measles or smallpox, delights to visit its wrath upon children, but if by some chance a child escapes chickenpox, as often happens, there is no known physiological law that will with certainty protect this child when grown to manhood, from contracting chickenpox if exposed to that disease.

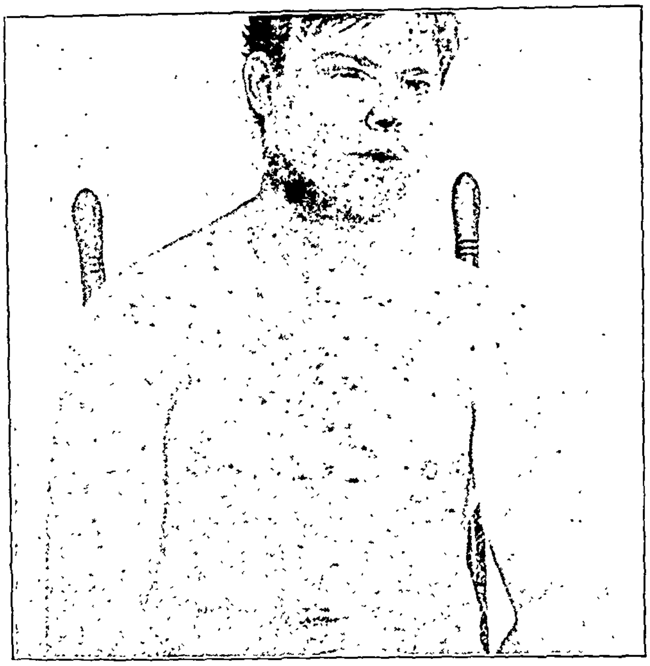

Fig. 1.—Varicella. Aged 22 years. Fifth day of the eruption. Macules, papules, vesicles, pustules and scabs from broken and dried vesicles.

I will present a case with some notes on the diagnosis. The accompanying illustrations, Figs. 1 and 2, are from photographs of a case of chickenpox in a man 22 years old. The photographs were taken on the fifth day of the disease, which was also the fifth day of the eruption. Dr. W. S. Orth, of this city, was called to see the man and pronounced the disease chickenpox. Dr. L. E. Smith saw the case with Dr. Orth, and agreed with him as to the diagnosis. I was then requested to see the patient and concurred in the opinion that it was chickenpox. Dr. John R. Neely, of the Department of Health, saw the case later and also pronounced it varicella. The following is the history:

Wm. S., 22 years old, was vaccinated with a typical result seven years previous. There were no prodromal symptoms experienced, no chill, no headache, backache, nausea nor fever. The eruption came on rapidly, but irregularly, first on the body, then the face, hands and limbs. It appeared as described, as "small blisters."

I saw him on the fourth day of the eruption and found large vesicles, large pustules, some papules and scabs from broken vesicles. This was at the height of the disease. I was unable to procure a photograph that day, but the following day Dr. Drake of the Department photographed the man. The lesions show well in the photograph, but had dried down some and are not so well marked as they were the day before. The man felt well and but for the appearance of his face would have preferred to continue about his work. Eight days after this photograph was taken he was again "tending bar."

As to the diagnosis, there was a history of exposure to a case of chickenpox in a child. In the same room with the patient was his 11-year old sister with a typical case of chickenpox represented in Fig. 3. There were no prodromal symptoms. Eruptions were vesicular and rapidly became large vesicles, quickly turning to pustules or breaking and forming dried scabs. None were deeply seated except those showing secondary infection. The vesicles and pustules were thinly covered and easily broken, and many of them were broken. The pustules on the fourth day were as mature and as large as they would be in variola on the ninth or tenth day of the eruption. There was no uniformity of development—macules, papules, vesicles, pustules, and dried scabs were abundant on the fourth day. This variety of lesions in so marked a degree could not be found in smallpox. In smallpox a man would have some prodromal symptoms with so profuse an eruption.

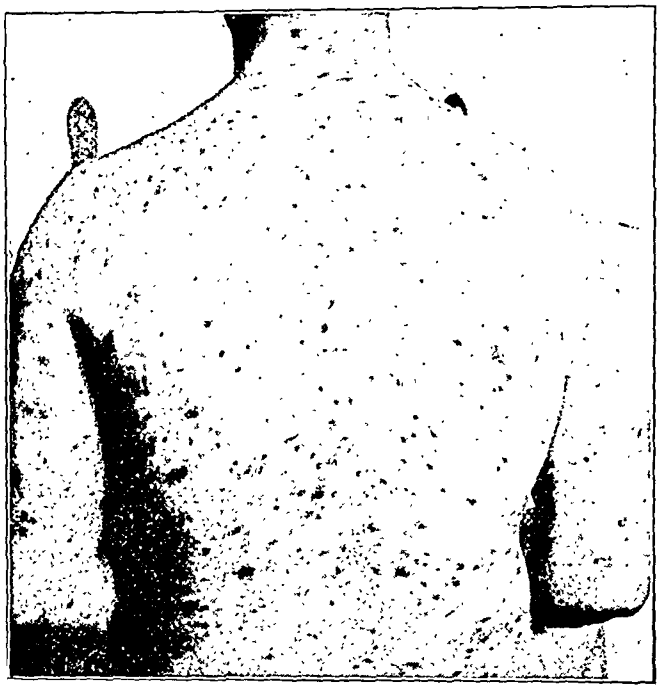

Fig. 2.—Varicella. Aged 22 years. Fifth day of the eruption. Macules, papules, vesicles, pustules and scabs from broken vesicles.

There were visitors and several unvaccinated children at this house. An unvaccinated child, sister of the patient, came home while the patient was scaling. Nothing was done to destroy contagion. The man went quency of mastoid disease as compared with the total number of cases of acute and chronic middle-ear suppurations. It has occurred to me that we have more than our proportion of middle-ear suppurations, running their course and getting well, or going over into the chronic state and becoming often a fixture with the individual. But even with a large number of these latter cases the comparative rarity of mastoidal complications has been conspicuous and a matter of observation. On the contrary, in other sections of our country I learn from medical friends that the disease is very frequent, occurring much oftener in an equal number of chronic and acute middle-ear suppurative inflammations. This has been particularly the case during the past winter in many of the large eastern cities, where, as a sequel to la grippe, mastoidal complications have prevailed to an alarming degree. Doubtless, the mildness of the climate will furnish the explanation of the small number of cases, as compared with their frequency in other sections having a harsher climate. The observation to which I would like to call your attention is that while mastoiditis is more frequent in some sections than others, it is yet an uncommon complication everywhere when the vast number of the acute and chronic suppurations of the middle ear are taken into consideration. One would naturally expect to find a large percentage of such cases, after viewing the intimate relationship of the tympanic and mastoidal cavities, remembering the violence of the inflammation in the former cavity.

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Age has played no rôle in the series of cases more recently in my hands, the disease occurring about equally often in children and adults. I know no reason why the negro should be exempt from this affection, but I recall but one case of mastoid inflammation in the negro. I have had abundant opportunity to study the many diseases of the black race, and after a large experience can state that the negro is much less susceptible to middle-ear diseases than the white race; and being thus less susceptible it follows that mastoidal complications should be very rare with him.

I have observed sometimes very serious mastoid disease without any such marked symptoms as swelling, pain, etc., and but little abnormal temperature. Recurrent slight acute attacks would finally lead to the decision that operative measures were needful, and the operation would develop the fact that very serious inflammation existed in the cavity. In a case recently operated, I found the inflammation and the destructive processes in the cavity out of all proportion to the external and constitutional symptoms. Cases also now and then present themselves where the mastoid inflammation exists apparently without middle-ear involvement. There must have been an acute otitis media, with an extension of the inflammation into the mastoid cells, but no suppuration of the middle ear had taken place. Such a case was operated upon, in which the patient had never complained of pain, impaired hearing, suppuration or other middle-ear symptoms, yet evidences of mastoid inflammation were so pronounced that a radical operation was deemed necessary. It is an error to suppose that every case of mastoiditis is preceded by suppurative otitis media, as experience teaches us the contrary.

Again, there can be no doubt of the tendency to spontaneous and complete recovery in many cases of the disease of even severe types, for in some of these reported an operation was refused and yet a perfect cure was attained. A good result is not infrequently reached only by resorting to the Wilde incision. Such recoveries occur often enough to cause one to pause and consider whether the severe and radical operation for mastoid disease is not frequently made when a little delay might have led us to much simpler and just as satisfactory treatment. I would not like to be considered as advocating anything but prompt and thorough surgical treatment in well-marked typical acute or subacute mastoiditis, but there are cases where intelligent delay and milder measures yield just as good results as are invariably produced in the more violent cases by the most radical surgical treatment. The fact I wish to lay stress upon here is that not in every seemingly severe case of mastoid disease is it necessary to rush to radical operative treatment, but that not an inconsiderable number make good recoveries under milder measures. One of the chief advantages of the surgical treatment is the rapid and complete cessation of the middle-ear inflammation, discharges, etc., in a large majority of cases.

My experience has led me to the conclusion that such radical measures as the Stacke operation are seldom required, the disease yielding readily and satisfactorily to the less severe operative procedures; indeed, my records do not show in a single instance that it was needful to resort to the severer operations.

To recapitulate, my conclusions, based upon a large number of mastoid operations, are:

1. Infrequency of mastoid disease as compared with the large number of cases of suppurative otitis media.
2. Mild type of the disease, freedom from cerebral and other dangerous complications.
3. Comparative exemption of the negro race.
4. Presence of serious mastoid disease without marked outward symptoms, fever, etc.
5. Presence of mastoid disease without apparent middle-ear involvement.
6. Not every case requires radical operation.

[The discussion will appear with other papers of the Symposium, to be printed in succeeding issues of The Journal. *—Ed.]*

Malaria and Mosquitoes.—Dr. Dionisi, of Rome, has involuntarily contributed another example of the infallibility of the transmission of malarial infection by mosquitoes. A number of which he was cultivating for purposes of research escaped from their cage and stung him. After a few days of incubation he was prostrated with a violent attack of typical estivo-autumnal fever in the middle of January.

DIFFERENTIAL DIAGNOSIS BETWEEN CHICKENPOX AND SMALLPOX.

HEMAN SPALDING, M.D.
Chief Medical Inspector, Chicago Health Department.
CHICAGO.

In conversation with an eminent dermatologist recently, he made the remark that he had never seen chickenpox in an adult. I thought it a remarkable statement in so experienced a man, inasmuch as I had seen a large number of such cases while connected with the Department of Health of Chicago. I subsequently noticed a statement published in the *Cleveland Journal of Medicine*, by Dr. William Thomas Corlett, to the effect that he had never seen a case of chickenpox in an individual after puberty. A little later THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION editorially said that chickenpox in an adult was so rare an occurrence that "it might be a safe rule in some respects to call every case in an adult smallpox that one feels tempted to diagnose as varicella."

An adult with a supposed case of chickenpox either has or has not chickenpox. If he has it, he should not be treated for something else. Chickenpox, like other eruptive diseases, as measles or smallpox, delights to visit its wrath upon children, but if by some chance a child escapes chickenpox, as often happens, there is no known physiological law that will with certainty protect this child when grown to manhood, from contracting chickenpox if exposed to that disease.

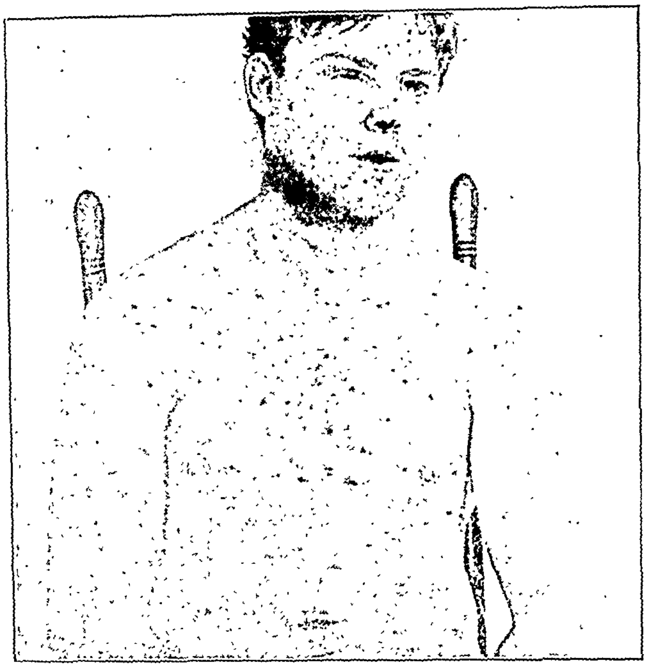

Fig. 1.—Varicella. Aged 22 years. Fifth day of the eruption. Macules, papules, vesicles, pustules and scabs from broken and dried vesicles.

I will present a case with some notes on the diagnosis. The accompanying illustrations, Figs. 1 and 2, are from photographs of a case of chickenpox in a man 22 years old. The photographs were taken on the fifth day of the disease, which was also the fifth day of the eruption. Dr. W. S. Orth, of this city, was called to see the man and pronounced the disease chickenpox. Dr. L. E. Smith saw the case with Dr. Orth, and agreed with him as to the diagnosis. I was then requested to see the patient and concurred in the opinion that it was chickenpox. Dr. John R. Neely, of the Department of Health, saw the case later and also pronounced it varicella. The following is the history:

Wm. S., 22 years old, was vaccinated with a typical result seven years previous. There were no prodromal symptoms experienced, no chill, no headache, backache, nausea nor fever. The eruption came on rapidly, but irregularly, first on the body, then the face, hands and limbs. It appeared as described, as "small blisters."

I saw him on the fourth day of the eruption and found large vesicles, large pustules, some papules and scabs from broken vesicles. This was at the height of the disease. I was unable to procure a photograph that day, but the following day Dr. Drake of the Department photographed the man. The lesions show well in the photograph, but had dried down some and are not so well marked as they were the day before. The man felt well and but for the appearance of his face would have preferred to continue about his work. Eight days after this photograph was taken he was again "tending bar."

As to the diagnosis, there was a history of exposure to a case of chickenpox in a child. In the same room with the patient was his 11-year old sister with a typical case of chickenpox represented in Fig. 3. There were no prodromal symptoms. Eruptions were vesicular and rapidly became large vesicles, quickly turning to pustules or breaking and forming dried scabs. None were deeply seated except those showing secondary infection. The vesicles and pustules were thinly covered and easily broken, and many of them were broken. The pustules on the fourth day were as mature and as large as they would be in variola on the ninth or tenth day of the eruption. There was no uniformity of development—macules, papules, vesicles, pustules, and dried scabs were abundant on the fourth day. This variety of lesions in so marked a degree could not be found in smallpox. In smallpox a man would have some prodromal symptoms with so profuse an eruption.

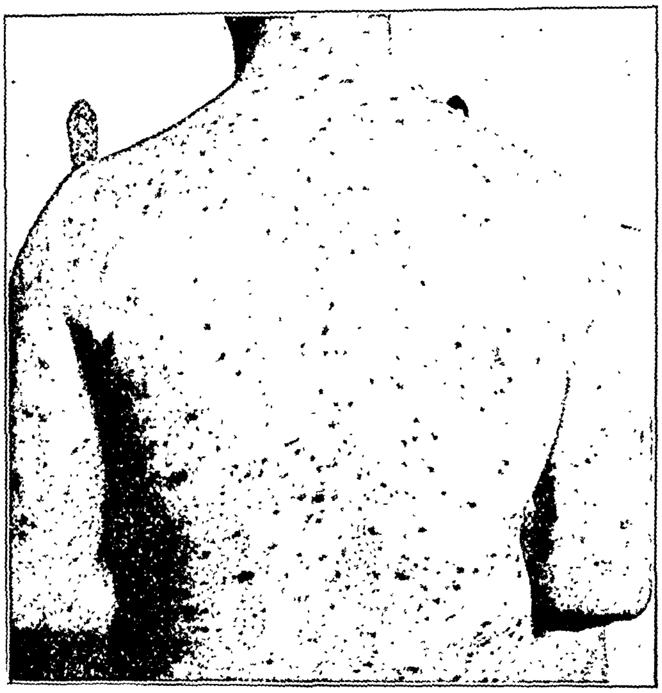

Fig. 2.—Varicella. Aged 22 years. Fifth day of the eruption. Macules, papules, vesicles, pustules and scabs from broken vesicles.

There were visitors and several unvaccinated children at this house. An unvaccinated child, sister of the patient, came home while the patient was scaling. Nothing was done to destroy contagion. The man went to his work behind the bar at a time when, if it had been smallpox, he would have conveyed the disease to others; yet no one took the disease, except one child, and she had chickenpox.

I have seen many examples of perfectly typical chickenpox in adults. The early part of 1899 Prof. Henry M. Lyman reported a case of chickenpox in a man 22 years old. I had an opportunity to see the case with Dr. Lyman. It was typical in every way, except the presence of headache for two days preceding the eruption.

It has frequently happened during mild epidemics of variola, such as is now prevalent over various parts of the country, that a mistaken diagnosis of varicella has been made, and disastrous results have followed, and I do not want to encourage any one in the belief that varicella is always easily distinguished from mild variola, but a correct diagnosis ought always to be made, for it is a serious matter to send a non-variolous patient to the smallpox hospital.

There are cases of variola and varicella with clinical symptoms of both diseases present which will puzzle the most experienced diagnostician. It must not be lost sight of that varicella does quite frequently attack adults.

In contrast to the above case, observe the character of the eruption in the case of smallpox represented in Figs. 4 and 5. This shows smallpox at the sixth day of the eruption and ninth day of the disease. There is a marked difference in the appearance of the lesions. In Figs. 4 and 5 there is no sign of the vesicles breaking down and drying into scabs, though the lesions are a day older than those in the case of chickenpox, represented in Figs. 1 and 2.

The vesicles now turning pustular are covered with the entire skin, making a protection to the vesicle so strong that it is not easily broken. These lesions are still growing in size and will continue to enlarge for four days more. The lesions in Figs. 1 and 2, five days old, are smaller than they were the day before the photographs were taken, and each day will see a diminution in the size of the lesions, except in the exceptional ones, which have received extraneous infection.

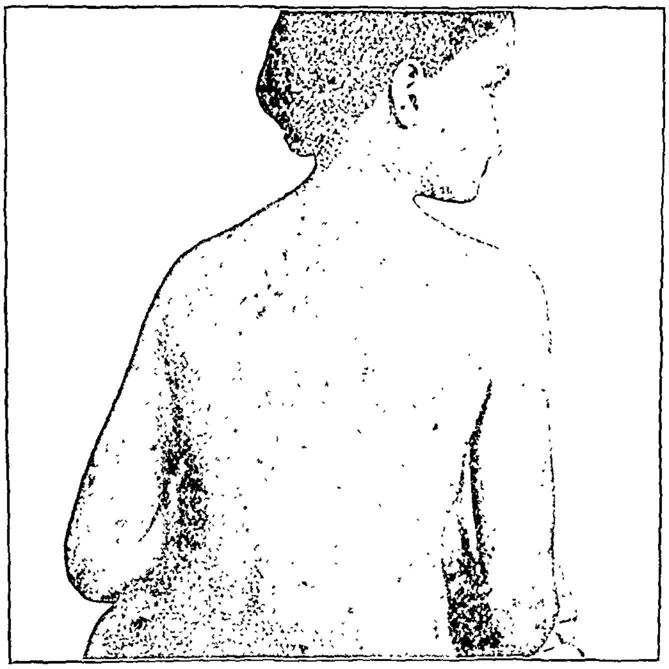

Fig. 3.—Varicella. Aged 11 years. Second day of the eruption. On right elbow three lesions caused by scratching owing to presence of urticaria.

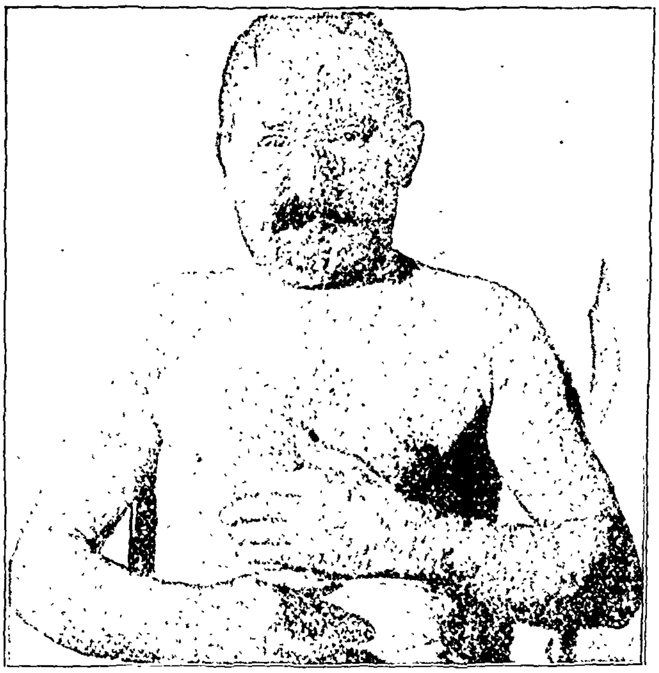

Fig. 4.—Variola. Sixth day of eruption.

The occasional occurrence of chickenpox in adults has been a source of confusion to medical men who are not in constant touch with variola and varicella and have not become perfectly familiar with the clinical aspect of the two diseases in all their forms.

A diagnosis is easily made in a typical case of either of these diseases, but in the mild form of smallpox now prevalent throughout the country, a perfectly typical case is not often seen.

These irregular forms of variola present numerous deceptive aspects. In a large proportion of the cases the eruption will appear after two days of prodromal symptoms instead of on the evening of the third or the morning of the fourth day, as is usual. In some instances there will be violent prodromal symptoms; chill, high fever, headache, backache and vomiting, followed by so insignificantly few eruptions as to be disappointing and misleading to a physician who is inexperienced in the diagnosis of smallpox.

More often the prodromal symptoms are insignificant as well as the eruption. There may be an absence of headache, or slight headache with no backache. Nausea has been very frequently present in these mild forms of the disease. These symptoms are often so mild as not to stop the subject from his work. He always feels better as soon as the eruption appears, no matter if the disease is so mild that only one or two papules appear, and if he has stopped work for a couple of days because of feeling a little sick, he will go to his work in most instances when this eruption occurs, if he is not stopped. I have found men with this form of smallpox, in the pustular stage of the disease, working in printing houses, packing houses, and factories. They felt no inconvenience and were not aware of the nature and danger of the disease with which they were afflicted.

In the mild form irregularity in development is frequently found. The vesicles fail to fill completely, will become pustular as early as the fourth or fifth day of the eruption, their contents are found to be hardened, become dry and horny and scale off before the tenth day. Some scale earlier than this. In the mild form modified by an old vaccination we frequently find a condition which is generally recognized to be a characteristic of chickenpox, but not present in smallpox, viz., as many as three stages of development of the lesions side by side. A few papules, numerous vesicles and some pustules and even scabs are found at the same time. The scabs would be the result of tearing the vesicles by scratching. These cases run their course and the lesions dry up and scale off in less than ten days.

In a few of these cases the pustules seem to involve the deeper layer of the skin so slightly that some have thought the cutis vera is not a part of the covering of the pustule. I believe the smallpox pustule always involves the cutis vera. I think this fact is the most valuable distinguishing feature about the smallpox lesion for diagnostic purposes.

The papule seems to be pushed up from below the skin, bringing in front of it as a covering, all the layers of the integument. *Hence the tenacity* of the covering of the smallpox vesicle or pustule. *It is not easily* broken and as a rule is not ruptured till the eleventh day of its growth.

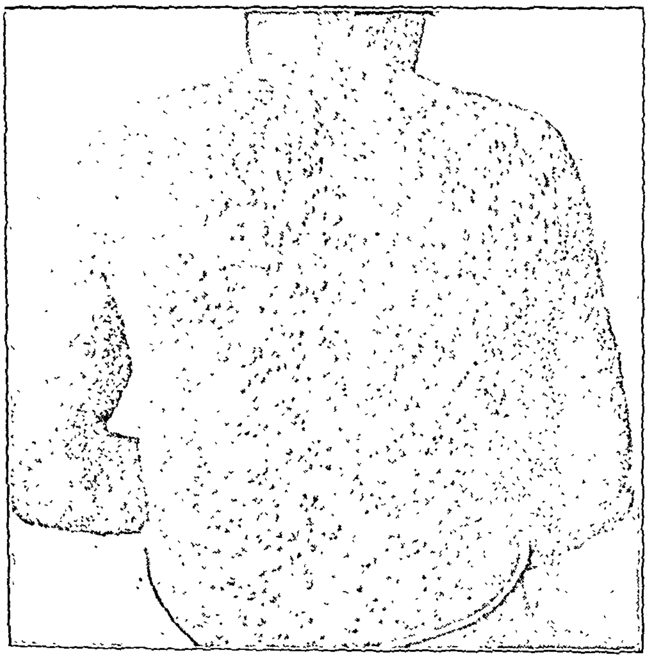

Fig. 5.—Variola. Sixth day of eruption.

Observe in Fig. 6 the deep-rooted pustules, ten days old, with thick investment, thick and strong enough to resist decay and external violence for ten days. The pustules of chickenpox, no matter how robust, will not resist decay and accidental pressure more than four or five days. Chickenpox lesions have for a covering only the outer layer of the skin. This covering is fragile, easily broken and *is* broken the first, second, third or fourth day after the appearance of the vesicle.

In the adult negro chickenpox lesions on the wrists and hands have such a thick covering that they resist destructive influences for fully five days, and if there were no typical varicella lesions over the body the diagnosis would be extremely difficult. The external layer of skin in an adult negro is thick and the eruption of varicella here looks and feels like the papule of variola, but the eruption over the body will aid in determining the nature of the disease.

It must not be forgotten that sometimes there are slight prodromal symptoms in varicella, and that in cases of mild smallpox sometimes the prodromal symptoms are very slight, so that we are compelled to make the diagnosis on the character of the eruption as presented to the eye. The diagnosis can be made, for there is a difference in the appearance to the eye, in the clinical course and development of the lesion.

In Chicago we have had an excellent opportunity to see and study mild smallpox as it has come to us during the past eighteen months from sixteen different states under the various names of "giant chickenpox," "Cuban itch," etc. Dixon, Ill., contributed six cases of smallpox to Chicago, though the disease in that city was generally known by another name. We placed all these case in the Isolation Hospital, where they ran a typical course of mild smallpox in every fact and detail. I visited three of the neighboring states where this mild type of smallpox was under discussion and found that in every instance the disease was smallpox.

While as a rule the attack is mild in this outbreak, it is not always so. We have had the confluent and the hemorrhagic form of the disease in our hospital.

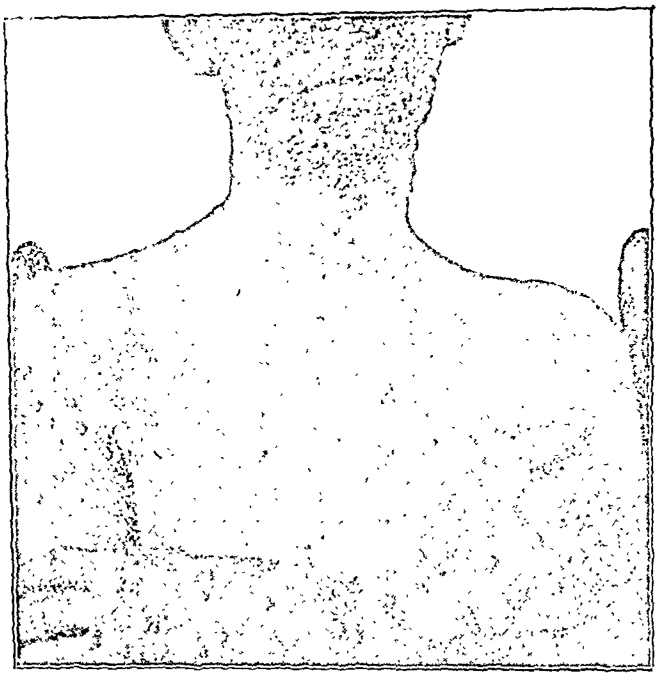

Fig. 6.—Variola. Tenth day of eruption.

A patient from Minnesota, with a mild case, diagnosed by two physicians as chickenpox, was permitted to mingle with others and visit her home in Chicago. Two of her sisters, a brother and her father, none of whom had been vaccinated, contracted the disease from her. The father and two sisters had a very mild form of the disease, but the brother had the disease in the *confluent form*, which resulted in his death in about two weeks. Here we had four people taken sick at the same time after an exposure to a supposed case of chickenpox, three of them having the disease in as mild a form as the sister who was supposed to have chickenpox, while the fourth had the disease in one of its worst forms.

In making a diagnosis of variola, remember that there will be some prodromal symptoms in the mildest cases if you are successful in getting the truth out of the patient, that when the eruption appears the patient will always feel better unless there is present some intercurrent disease, and that the fever will subside as the eruption appears. Look for the early appearance of the eruption on the vascular parts, on the face, in the throat, on the wrists and hands, on the foreskin and glans penis. If you find a papule on the ear, it will help in the diagnosis. Do not depend too much on finding umbilication of the vesicles. You will be disappointed in the mild cases, as it is often absent.

Of all the cases of smallpox sent to the Isolation Hospital in the last eighteen months, but sixteen had ever been vaccinated and these had either doubtful or very old scars.

MISSTATEMENTS ON ANTIVIVISECTION.

CORRESPONDENCE WITH AMERICAN HUMANE ASSOCIATION.

W. W. KEEN, M.D., LL.D., F.R.C.S. (Hon.)
Late President of the American Medical Association; Professor of Surgery, Jefferson Medical College.
PHILADELPHIA.

*Letter from President of American Humane Association.**

TOLEDO, OHIO, Oct. 4, 1900.

PROF. WILLIAM W. KEEN, late President of the AMERICAN MEDICAL ASSOCIATION, Jefferson Medical College, Philadelphia.

Dear Sir:—My attention has just been called to a passage in the published "Report of the Hearings" before the Senate committee, held at Washington last February, on the bill for regulation of vivisection. In this volume the following conversation between Senator Gallinger and yourself is recorded:

> SENATOR GALLINGER—What knowledge have you of the advances made by vivisectionists that have led them to progress from the brute creation to the human creation in making these so-called vivisection experiments?
>
> DR. KEEN—I presume that you refer to a pamphlet issued by the American Humane Society. I have only to say in reference to it that there were a number of experiments which I would utterly condemn. Of the experiments narrated in that pamphlet, I have looked up every one that I could. Only two are alleged to have been done in America. Many of them are so vague and indefinite that I could not look them up, but as to those that I could, some are garbled and inaccurate; not all of them, observe.
>
> SENATOR GALLINGER—Some of them?
>
> DR. KEEN—Some of them.

A statement of this character, based upon such authority, it is impossible to ignore. Proceeding from one less eminent than yourself in that profession which you represent and adorn it might pass without notice, but coming from you, sir, such a charge must be investigated and probed to the fullest extent. Its importance is evident, and in testing its accuracy you will give me, I trust every assistance within your power.

First: Regarding the cases of experimentation upon human beings recorded in our pamphlet, "Human Vivisection," you informed the Senate committee that "*Many of them are so vague and indefinite that I could not look them up.*" We challenge the accuracy of that statement, and ask for proof. Of the various series of experiments upon human beings, made for the most part upon women and children in hospitals and infirmaries, the authorities given in this pamphlet are as follows:

1. Bulletin of the Johns Hopkins Hospital, July, 1897.
2. Boston Med. and Surg. Jour., Aug. 6, and 13, 1896; Phila. Polyclinic, Sept. 5, 1896.
3. N. Y. Med. Record, Sept. 10, 1892.
4. British Med. Jour., July 3, 1897; New England Med. Mo., March, 1898.
5. Medical Press, Dec. 5, 1888; British Med. Jour., Aug. 29, 1891; London Times, June 27, 1891; and other journals.
6. Medical Brief, June, 1899.
7. Ringer's Therapeutics, pp. 585, 588, 590, 591, 498, 503; The Lancet, London, Nov. 3, 1893.
8. Newcastle Daily Chronicle, Sept. 21, 1888.
9. Med. Press and Cir., March 29, 1899; The Lancet, London, May 6, 1899, p. 1261.
10. Allg. Wiener med. Zeitung, Nos. 50 and 51.
11. Deutsche med. Woch., Nos. 46-48, 1894.
12. Ibid., Feb. 19, 1891.
13. Lecture before Medical Society of Stockholm, Sweden, May 12, 1891.
14. British Med. Jour., *Oct. 15, 1881; Medical Reprints for* May 16, 1893; Nineteenth Century, December, 1895.

For one series of experiments in the above list, those made by Dr. Jansen upon children of the "Foundlings' Home"—with the "kind permission" of the head physician, Professor Medin—because, as he said, "calves were so expensive," it appears that the only authority given was a reference to his lecture delivered before a Swedish medical society upon a certain date. Although, so far as known, the facts there stated have never been denied, yet the reference may, perhaps, be called indefinite. But *one* case is not "many." To what other of the references above given did you refer when you informed the Senate committee that "*Many of them are so vague and indefinite that I could not look them up?*" Had you stated that your library—ample as it is—did not contain, and could not be expected to contain, all of the foreign authorities to which reference was made there would have been nothing to criticize. I must assume, sir, that you have not put forth an aspersion of another's reliability merely to have acknowledgement of the inadequacy of your sources of reference; that the proofs of your statement, covering "*many*" cases, are available, and, in the interest of accuracy, I ask you to produce them.

Second: There is yet another point to which I ask your attention. You made the statement before the Senate committee that in regard to our published account of cases of human vivisection, "*many of them are so vague and indefinite that I could not look them up; but, as to those that I could, some are garbled and inaccurate; not all of them, observe.*"

This, sir, is a most serious charge. You distinctly declared that of the cases personally investigated by yourself, as quoted in the pamphlet on "Human Vivisection," some are "garbled and inaccurate." We deny the charge, and again challenge production of evidence upon which it is made.

A "garbled" quotation is one which, by reason of omission and perversions, is essentially unfair. Sometimes it is a statement from which parts are omitted or transposed for the purpose of conveying a false impression. To omit quotation of parts not directly bearing upon the question for the sake of brevity—this is not "garbling," for all quotations would then be impossible. We assert that in quoting accounts of the cases of human vivisection no omissions of essential facts have been made sufficient to impair the accuracy or fairness of the quotation. Let us put the matter to the test. Point out, if you can, the "some cases" which you found "garbled and inaccurate," and in proof of the charge *quote the omitted sentences or words which, had they been inserted, would cause you and the general public to justify and approve the experiments on human beings which we have so severely condemned.*

Third: You stated, sir, before the Senate committee that only two experiments upon human beings "are alleged to have been done in America." I question, sir, whether that remark is quite in accord with the highest ideals of truth; it is the language of doubt; it seems to signify and imply that even you are aware of no other experiments upon human beings than two cases which are thus "alleged." I am very confident, sir, that you will not venture formally to assert—what you have seemed to imply—that you know of but two experiments upon human beings made in this country and recorded in the medical literature of the United States. There is indeed need of further enlightenment, if the medical profession of this country, so worthily represented by yourself, is ignorant of what has been done by men without pity and without conscience.

Trusting to have response from you at an early date, I am,
Yours most truly, JAMES M. BROWN, President.

DR. KEEN'S REPLY.

1729 Chestnut Street.
PHILADELPHIA, PA., Jan. 21, 1901.

JAMES M. BROWN, ESQ., President American Humane Association, Toledo, Ohio.

Dear Sir:—Your letter of October 4 reached me promptly, but as I then notified you would be the case, very pressing engagements, absence, etc., prevented an earlier reply. Now that I have a little leisure, I can answer your letter and furnish you in detail the proofs for which you ask.

There are two pamphlets, both entitled "Human Vivisection." First, one of thirty pages, "printed for the American Humane Association, 1899;" the other of seven pages, "published by the Humane Society, Washington, D. C.," without date, but from its contents published a little later, as it is chiefly a synopsis of the same instances reported more fully in the

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larger pamphlet. Hereafter when I speak of "the pamphlet" I mean the larger one, unless I specifically mention the smaller one.

This larger pamphlet consists of two parts: first, (pp. 3-12) a reprint of a portion of "Senate Document No. 78" and the rest of it of various quotations, translations and comments. No name is attached to either part to indicate who is responsible for the accuracy of the references, the translations or the quotations. As the whole is preceded by an open letter signed by the president and secretary of the American Humane Association, and as you refer to the pamphlet as "ours," I presume the association holds itself responsible for such accuracy, especially as you as its new president challenge me for proof.

The pamphlet purports to furnish a reprint of a portion of "Senate Document No. 78," and refers to this document in a way that would lead uninformed readers to suppose that this is a document expressing the sentiments of the United States Senate. It is, therefore, important to call your attention to the fact that Senate Document No. 78 is simply a collection of statements and papers by various persons, printed by order of the Senate, but in no sense expressing the opinions or convictions of that body. The last paper in this document is one on "Human Vivisection," by "A. Tracy."

In two respects "A. Tracy" has a right to complain that the reprint is inaccurate: First, it omits to print the name of the author "A. Tracy." Surely he—or she(?)—should receive whatever credit there is attaching to his work. Secondly, on page 30, line 8, of Senate Document No. 78, I read "A. Tracy's comment. ["This patient, therefore, was scientifically murdered."] This statement the reprint very wisely omits—but there are no indications of the omission. Of this, more hereafter.

Your letter challenges the accuracy of my statements in three particulars: 1. I stated that many of the references in the pamphlet are "vague and indefinite." 2. I said that some of the accounts of the experiments are "garbled and inaccurate." 3. I stated that of the experiments narrated in the pamphlet only two were alleged to have been performed in America.

You will pardon me if I indignantly resent your imputation of untruthfulness in regard to this last statement. You entirely misinterpret my statement, which had no reference to my knowledge or ignorance of any other American experiments. I said that the pamphlet only contained two instances of such experiments which were alleged to have been done in America. These are recorded on pages 4 and 5 of the pamphlet. All the rest were done in Europe, South America, and Hawaii, years before it came into our possession. If you still question the accuracy of my statement and believe that there is a third instance of experiments done in America and described in the pamphlet, point it out by page and paragraph.

Turning to the other two really important matters referred to in your letter, let me again state clearly the question at issue. It is not whether the experiments meet with my approval, but solely whether the reports of them in the pamphlet issued by the American Humane Association are reliable and accurate both as to their sources and substance.

1. MANY OF THE REFERENCES ARE VAGUE AND INDEFINITE.

The references are so vague and indefinite in many cases that the statements and quotations made can not be verified by consulting the originals. The preface of your president and secretary states that "in *each case* the authority is given," and what sort of "authority" do you depend upon? Newspaper medicine and surgery are notoriously inaccurate. I have personally had so much experience and observation of this that I am always certain that at least one-half or more of the statements in newspapers in reference to medical matters are inaccurate, not purposely, but only because the writers are not medical men. Yet you depend for the accuracy of your statements upon newspapers as follows (I follow the inaccurate spelling of foreign names in your pamphlet):

1. The Vienna correspondent of the London Morning Leader, Jan. 26, 1899 (p. 3), of whom more hereafter.
2. The Deutsche Volksblatt, Jan. 25, 1899, (p. 3.)
3. The Washington correspondent of the Boston Transcript Sept. 24, 1897 (p. 9), of whom more hereafter.
4. The N. Y. Independent, Dec. 12, 1895 (p. 11).
5. The London Times, June 27, 1891 (p. 16).
6. The Tagliche Rundschau of Berlin (p. 17); no year, month or day being given.
7. The Vossische Zeitung of Berlin, no year, month or day being given (p. 18).
8. The Vorwartz, no year, month or day being given (p. 18).
9. The Danziger Zeitung, July 23, 1891 (p. 18).
10. The Schlesische Volkszeitung, July 24, 1891 (p. 18).
11. The Hamburger Nachrichten, July, 1891, no day stated (p. 19).
12. A correspondent of the Newcastle (England?) daily Chronicle, Sept. 21, 1888 (p. 22).
13. Dr. R. E. Dudgeon, in the Abolitionist, April 15, 1899 (p. 24).
14. A letter by Dr. Edward Berdoe to the London Chronicle, without year, month, or day (p. 29).

Few of these fourteen newspaper references can be consulted in this country; five of them (Nos. 6, 7, 8, 11, and 14) are impossible of consultation for want of any date whatever.

In no case would I be willing to admit a *newspaper* paragraph, a non-professional and usually unsigned statement—even if correctly quoted—as a sufficient authority for a grave charge against an individual or the profession.

Look for a moment what stuff Senator Gallinger stated at the "Hearing" he had himself caused to be printed. It is published on page 31 of the "Hearing" and on page 3 of the pamphlet. It consists of cable dispatches printed in some newspaper—Senator Gallinger did not even remember its name. The author of the dispatch from London is utterly unknown. The dispatch states that "the Vienna correspondent of the [London] *Morning Leader says*" so and so. Who and how reliable is the Vienna correspondent? He says that "the physicians in the free hospitals of Vienna" do so and so. Who *are the physicians?* In what hospitals were these deeds of darkness done?

And upon such evidence it is seriously proposed to indict the medical profession! Whether these dispatches are "garbled and inaccurate" in their alleged facts who can find out?

If a lawyer tried to convict a man of petty larceny on such testimony, he would be laughed out of court. An yet a senator of the United States and the American Humane Association *actually* adduce such statements as evidences of the gravest charges and spread them broadcast!

I now add six other "vague and indefinite" references not to newspapers.

15. On page 13 there is a quotation from Tertullian. The reference in the foot-note is "Tertullian, De Anima, Vol. ii. pp. 430, 433, Tran., by Holmes." I have compared the quotation with Clark's Edinburgh edition of the Translation of Tertullian by Holmes, the date of the edition being 1870. No such quotation exists on pages 430-433. Possibly it may be that the quotation is from another edition. No edition is named in the pamphlet; another instance of a "vague and indefinite" reference.

16. On page 17 a formal accusation is quoted as made by a Dr. Eugen Leidig against certain surgeons. *No reference whatever to any book or journal is given* by which the accuracy of the quotation can be tested. Is not this again "vague and indefinite?"

17. On page 24 is a reference to a paper by "Professor E. Finger, of Vienna (*Allg. Weiner Med. Zeitung*, Nos. 50 and 51." No year is given, a somewhat essential part of the reference, as there are over forty volumes of this journal, each with the weekly numbers 50 and 51. No such paper by Finger is published in that journal, at least from 1890 to the present time. The reference is quoted from a paper by Dr. R. E. Dudgeon in the *Abolitionist*—an English journal—of April 15, 1899. I have been unable to consult this journal. If Dudgeon gave the year, then the Humane Association pamphlet has misquoted him. If he did not, then both the Association's pamphlet and he have been "vague and indefinite."

18. On page 25 again is a reference to a statement in a "lecture before the Medical Society of Stockholm," by Dr. Jansen, of the Charity Hospital, reporting certain experiments. No reference whatever is given even to a newspaper, much less to any medical journal. As the statement is in quotation marks it *purports* to be the exact words used and ought to have had *some* source to which a reference was possible, especially as the preface of the pamphlet says: "In each

case the authority is given." I am glad to see that in your letter you recognize this as one in which the reference is really inadequate. I *notice*, however, that even in your letter you do not supply this missing reference. You say the facts asserted in the Jansen paragraph have never been denied. Of course not. The first *requisite is to know whether* they are correctly quoted.

Turning now from the larger pamphlet to the smaller one, which was spread broadcast by *house to house distribution* in Washington at the time when the hearing on this matter took place last winter, I find repeated in this a number of the same vague and indefinite references and garbled and inaccurate quotations already or to be described, to which are to be added the following:

19. On page 3, an extract from a *report referring to experiments* upon insane patients is printed in quotation marks. The *only reference is to a* "published report" in 1890 of the "Medical Staff of the Public Insane Asylum in Voralberg, Austria." The librarian of the Surgeon General's office informs me that there are two small insane asylums in the Voralberg, *namely*, at Hall and Valduna. Some reports of the former are in the library and in them *no account* of the experiments referred to can be *found. No reply has* been received to a letter addressed to this asylum as named in the pamphlet and written over a year ago.[1]

20. On the same page is an account of some experiments on bacteria from boils, and the reference is to the "*Deutsches Volksblatt;*" no day, no month, no number, no page, nor even the year is given. If this is not "vague and indefinite," what is?

21. On page 24 there is an account of Kroenig's experiments, to which I shall recur later. No reference *whatever is given* to the source from which the account is taken.

2. SOME OF THE STATEMENTS ARE GARBLED AND INACCURATE.

To be vague and indefinite *in* charges affecting the morals and the reputation not only of individuals, but, in fact, of a whole profession is bad enough, but to make statements that are "garbled and inaccurate" is, as your letter recognizes, a much more serious matter. Let me consider the instances in detail.

1. "Vivisection Experiments *Upon the Insane," pages 4 and* 5: In the following quotation, the words of the original, which *I enclose* in brackets, are omitted. "To these patients the thyroid tablets [each pill representing five grains of the fresh sheep's gland] were administered," etc. This omission is of *moment*, because any one familiar with the administration of thyroid extract knows that the doses used by Dr. Berkley are frequently given to human patients, including the insane, *without producing symptoms dangerous to life*, but on the contrary with benefit. I have myself given such tablets to patients with goiter for weeks together in larger doses than Dr. Berkley used.

In the following paragraph the quotation is garbled *by omitting* the words which *I enclose in brackets*: "Two patients became frenzied and of these one died before the excitement had subsided [the immediate cause of the exitus being an *acute disseminated* tuberculosis]." And again in the next paragraph giving a report of the same case, the pamphlet quotes: "The thyroid extract was now discontinued, but the excitement kept up . . . *for seven weeks, at the end of which time* she died." *One would think* this was the end of the sentence and that she died from the effects of the thyroid tablets. Not at all. The original continues as follows: She died "with the clinical evidences of acute miliary tuberculosis"—galloping consumption. Does this not come within the definition of garbling given in your letter? "A 'garbled' quotation is one which, by reason of omission and perversions, is essentially unfair." To say that *this patient, who actually* died of galloping consumption, died from the effects of the thyroid extract, which had not been given for seven weeks before death, is as absurd as it would be to say she had died from the effects of moderate doses of laudanum given seven weeks before. Yet "A. Tracy's" comment on this case is: "[This patient was, therefore, scientifically murdered]." Your Association mutilates its reprints by wisely omitting this piece of absurdity, though the omission is not indicated. Moreover, *the* pamphlet states: "there is no intimation that the administration of the poisonous substance was *given for any* beneficial purpose to the patients, *for he* took care to select patients *that were probably* incurable." On the contrary, Berkley's original paper expressly states that instead of being incurable, one (Case 1) was cured and another (No. 3) was improved. Besides this, though the pamphlet is dated 1899, it omits all reference to Dr. Berkley's letter to the *British Medical Journal* for October 30, 1897, in reply to your friend Dr. Berdoe, which shows that, as a result of the administration of the thyroid tablets to these eight patients—a well recognized remedy for insanity,[2] not one died from the effects of the drug but that, on the contrary, two of those alleged "incurables" were cured—25 per cent.

In his admirable letter to *Life*—Dec. 6, 1900—Dr. Berkley says: "The purpose for which the article was written was to show to the medical profession that *a certain medicament in common use* was not free from objection, and should not be given in unsuitable cases. In *proper ones the results are* among the most resplendent attained by modern medicine, converting *the drooling* dwarf into an intelligent, well-grown man or woman; or in other instances, as in myxedematous insanity, affording the otherwise hopelessly insane with almost a specific to recover their reason." [*See the addendum at* the end of this letter.]

2. The Cases of Lumbar Puncture by Dr. Wentworth, of Boston, (p. 5): "*Lumbar puncture*," I may remind you, is the simple insertion of a hypodermic needle between the vertebræ into the sheath of the spinal cord, but below the cord itself, to obtain a few drops of the *cerebro-spinal fluid for diagnosis.*

The *pamphlet gives* what is called a "brief abstract" of five *of the* experiments related. The abstracts are indeed brief, so brief as to give a wholly erroneous impression *as to* the causes of the patients' death. The omissions are glaring instances of what the logicians call a *suppressio veri* equivalent to a *suggestio falsi*. Let me point this out in detail.

Case 2. It is correctly quoted that the last puncture (where *there were several* punctures I only give the last date) was made "Feb. 16, on the day of patient's death." The pamphlet fails to add, however, the important fact stated by Dr. Wentworth that the *postmortem* showed *an empyema* [*abscess in* the chest] which had burst into the lung, pneumonia, and inflammation *of* the brain with pus as the cause of death.

Case 3. The pamphlet *correctly says* "puncture Jan. 17, 1896; patient died Jan. 22." What Dr. Wentworth adds is omitted, namely: "No symptoms attended or followed the operation." Moreover, the post-mortem showed that the patient died from the widespread *changes* common *to infantile* wasting.

Case 5. The pamphlet says: "Puncture Feb. 3, 1896; patient died Feb. 4." It omits to state what immediately afterward follows, that the post-mortem showed "primary tuberculosis of the intestines. Double pneumonia," as the causes of death.

Case 6. The pamphlet quotes "Puncture Feb. 1; patient died in convulsions three weeks later." It *neglects to state what* Dr. Wentworth *particularly mentions*, "no reaction on the part *of the patient attended the operation*;" and it also fails to state that the child was seen only once and that the diagnosis then made was tubercular meningitis, which was clearly the cause of the child's death, three weeks later.

Case 7. The pamphlet quotes "Punctured Feb. 27; patient died Feb. 28. It omits the fact that the post-mortem showed that the child died from defective development of the brain and other causes; and that the history showed that the child, *who was 7 months of age*, had "*frequent convulsions, which began* when he was about 3 months old. While in the hospital the convulsions occurred not less than twenty times a day. Oftentimes he had several in an hour."

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[1] This letter was written by myself and not by the librarian.

[2] I quote the *following* from the eighth edition of Hare's Therapeutics, as to the use of thyroid extract: "In the dose of from 5 to 20 grains (0.35-1.3) three times a day [i. e. 15 to 60 grains a day] according to the degree to which it produces its effects, it has proved of value in acute mania and melancholia, puerperal and climacteric insanities, and in stuporous states with primary dementia." Berkley's maximum dose was 15 grains a day.

The inference from the pamphlet's "brief abstracts" of these cases is clearly, and it seems to me by these omissions was meant to be, that the deaths were due to the lumbar punctures, whereas the evidence is that the deaths were due to other causes and in two instances the operation is expressly stated not to have done any harm. Are not these abstracts "garbled and inaccurate?"

3. On page 7 the pamphlet refers to some experiments on the inoculation of lepers with syphilis, made in Hawaii, but published in the *N. Y. Medical Record* of Sept. 10, 1892. It is stated that the patients "were already suffering from one incurable disease and the object of the experiment was to ascertain whether with another, and even worse disorder, they might not be infected." This statement is incorrect. Most writers recognize only three stages of syphilis, primary, secondary *and tertiary.* The writer of the article in question believed that leprosy was a fourth and final stage of syphilis and not an independent disease. It is a well recognized fact by all scientific writers that a patient suffering from syphilis in any stage is immune to an inoculation of the virus; that is to say, the inoculation will not "take" if he is already a syphilitic. It was for the purpose of determining whether leprosy was a fourth stage of syphilis that the attempt was made. *None of those inoculated took the disease.*

4. Sanarelli's Experiments on the Inoculation of Yellow Fever, page 8: The references here are to the *British Medical Journal* for July 3, 1897, and the *New England Medical Monthly*, March, 1898. The extracts marked with quotation marks are from the *New England Medical Monthly.* Between the first and the second sentences of the quotation there should be some stars to note an omission, but none such appear. The omitted words state that *not* the germs of the disease, but the carefully filtered and sterilized germ-free fluid was used. Besides this and many other minor inaccuracies many of the scientific terms are changed into non-medical terms, which is not objectionable in itself. But such changes and inaccuracies should exclude quotation marks, for when used they mean that the words quoted are the *ipsissima verba* of the author, if in the same language, or an exact translation if from a foreign language.

But this is the least of all. The pamphlet says that the injection produced certain symptoms, among which are mentioned "the jaundice, the delirium, *the final collapse,*" the last three words being in italics in the pamphlet to call special attention to them. In the *British Medical Journal* and in the *New England Medical Monthly* the words "the final" *are not to be found.* We see not a few patients suffering from "jaundice, delirium and collapse" who recover, but when the expression is changed to "the final" collapse it means to every one that the patient died.

Moreover, the end of the quotation is as follows: "I have seen, [the symptoms of yellow fever] unrolled before my eyes thanks to the potent influence of the yellow fever poison made in my laboratory." *This entire sentence does not occur* either in the *British Medical Journal* or in the *New England Medical Monthly.* Whether it is quoted from some other source not indicated, or has been deliberately added, I leave you or "A. Tracy" to explain.

Moreover, immediately afterward, on the authority of the Washington correspondent of the *Boston Transcript,* it is stated: "It is understood that some, if not all, of the persons inoculated died of the disease." and then seven times afterward are repeated "the final collapse," the "unrolling before the eyes," "scientific assassination," "death," and "murder" quoted from a public speech before the American Humane Association. Let us see if these *were* "murders."

In the two references given there is no indication whether any of these patients died or not. How, therefore, "it is understood that some, if not all, of them died," I do not know. *As a matter of fact none of the human beings inoculated by Sanarelli died,* as any one desirous of learning the truth could have ascertained by consulting Sanarelli's original publication reporting his experiments with full details. (*Annali d'Igiene Sperimentale,* 1897, vol. vii, Fascic. iii, pp. 345 and 433.)

What hysterical oratory about "the final collapse," which was not final; "scientific assassination," which did not assassinate; and "murder" of those who were so disobliging as still to live! And this on the authority of the Washington correspondent of the *Boston Transcript,* who the pamphlet assures us is a person "who would seem to be unusually well informed in matters of science!" An excellent example of "newspaper medicine" and a good reason for my refusal to accept it as evidence, especially from other correspondents who may not be as "unusually well informed." May I ask whether "the Vienna correspondent of the London Morning Leader" is also one of those who, in your opinion, is "unusually well informed in matters of science," and whether his testimony is as wholly false as the one under consideration?

5. On page 23, the pamphlet quotes an account of some experiments of Dr. Neisser from the "Medical Press and Circular [England], of March 29, 1899." This is an instance again of misquotation and omission which can scarcely be other than intentional. The last sentence of the first quotation states: "of these eight girls, four developed syphilis." No stars indicate that any words have been omitted. The original reads: "of these eight girls [five were prostitutes, and of these five] four developed syphilis." The words in brackets are entirely *omitted in the pamphlet.*. They make a deal of difference, for what is more probable than that four out of five prostitutes should develop syphilis? Whether it makes any differences or not, however, is at present not the question. The issue is whether the quotation is "garbled and inaccurate." Does it not fulfill another of the definitions of "garbling" given in your letter, viz: "omissions of essential facts . . . . , sufficient to impair the accuracy or fairness of the quotation?"

Moreover the pamphlet's comment upon this case is as follows: "Does the London journal which reports these awful experiments denounce them as a crime against every law of morality? Not at all. It simply says that 'it would be difficult to acquit Dr. Neisser of a large measure of responsibility in respect of the causation of syphilis in these cases!' Could reproof be more gentle?"

Is that really all that the *Medical Press and Circular* "simply says?" On turning to that journal, after the above sentence, which is correctly quoted, the editorial continues thus: "We, however, are less concerned in establishing the culpability of Dr. Neisser than in condemning the spirit which prompted such experiments. All measures, even if novel, which may reasonably be expected to assist in bringing about the recovery of the patient without injury to his health may legitimately be resorted to with the consent of the patient, but measures, whether by drugs or by operation, which have not for direct object the cure of the patient and which may prove inimical to his health or condition, are inadmissible under any circumstances and must expose the perpetrator to professional ostracism and to penal rebuke."

Is "professional ostracism and penal rebuke" a reproof than which nothing could be "more gentle?" If this statement is not "garbled and inaccurate," what do words mean? How could this misrepresentation be otherwise than intentional?

6. On page 24 again, reference is made to the experiments of Menge.[3] The extracts being in quotation marks would purport to be exact translations. This is not the case. The collocation of the paragraphs, also—especially in the smaller pamphlet—is such that it would be supposed even by a careful reader that the babies experimented upon were inoculated with the germs taken "from the pus in the abdominal cavity of a person who had died of peritonitis," without any precautions or preliminary experiments, and that, therefore, these babies were exposed to a fatal infection. This is not true. Four columns of text in the original intervene between the first and the second paragraphs alleged to be quoted, and these detail experiments which proved that the inoculations which he then carried out would almost certainly be harmless. The result showed that he was right, for not the slightest ill effects followed. I have only words of

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[3] Deutsche medicinishe Wochenschrift, 1894, Nos. 46 to 48.

condemnation for Menge's experiments, but to misrepresent these experiments is scarcely less culpable than to perform them.

7. Then follows a brief account of Kroenig's experiments. The objects of these, the pamphlet says, were "to observe the surest way of *breeding* purulent bacteria." This is not true. On the contrary, his object, like Menge's, was to determine how these bacteria are normally *destroyed* in the part of the body in which the experiments were made. In only a single instance did any ill effects follow, and in this case the inflammation was brief and not dangerous either to life or health. In fact, the very *titles* of these two papers proclaim the destruction of the bacteria and not the surest way of breeding them, as Menge's title reads: "On a quality (Verhalten) of the vaginal secretion in non-pregnant females, which is *hostile* to bacteria," and Kroenig's is on the same peculiarity in pregnant women.

In the comment on these two series of experiments, they are spoken of as inoculations "with loathsome diseases," which would suggest to any one that the patients were successfully inoculated with syphilis or other similar diseases. This was not the case. Only inflammation would follow even had the inoculations been successful.

Moreover, to show the vague looseness of the alleged quotations, the two paragraphs on the experiments of Menge are in quotation marks and are introduced by the words, "He says: The bacteria I used, etc.," as if they were exact continuous translations. "He says" nothing of the kind. Instead of being exact translations, the first paragraph is made up of partly correct and partly incorrect translations from page 891 near the top of the second column and near its middle; and the second paragraph of partly correct and partly incorrect trans*lations from page 907 near the bottom of the first column. No* reference whatever is given to Kroenig's paper either by number, date or page. Is not this "vague and indefinite?" As a matter of fact it is the same journal (No. 43, p. 819) as Menge's paper, but published three weeks earlier.

8. On page 25 is one of the most outrageous instances of garbling, and mistranslation, or worse, which I have ever known to be perpetrated, even in antivivisectionist publications. It relates to observations and experiments of Professor Schreiber, reported in the *Deutsche medicinische Wochenschrift* of Feb. 19, 1891. The subject is introduced with the startling caption: "Inoculations with Tuberculin and Germs of Consumption." In the smaller pamphlet the caption is simply: "Injected Germs of Consumption." What was injected was not the "germs of consumption" at all, but tuberculin, a substance which at the date of Professor Schreiber's publication was engaging the attention of physicians throughout the civilized world as a therapeutic and diagnostic agent. To describe inoculations with tuberculin as "inoculations with the germs of consumption" can be attributed only either to gross ignorance or to wilful disregard of the truth.

In the first paragraph occurs the sentence: "He began with one decimilligram and continued to inject the tuberculin in ever-increasing quantities, until he at last injected as much as 5 centigrams, about 50 times as much as Koch said was the maximum dose for children of 3 to 5 years old." Any fair presentation of these experiments would have included Professor Schreiber's sentence, which he prints in bold-face type: "But even with so large a dose injected at one time, the children showed *no trace of a reaction.*" It would perhaps be too much to expect your society to have indicated on what grounds Professor Schreiber was led to the employment of such large doses, and that his observations demonstrated for young infants an exceptional tolerance of tuberculin, a phenomenon for which there are analogies with other drugs.

But the worst falsification is the succeeding account, in the form of what purports to be an exact translation, of Schreiber's inoculation of a boy with tuberculin. The alleged quotation begins: "I am sorry to say that it is very difficult to obtain subjects for such experiments. There are, of course, plenty of healthy children in consumptive families, but the parents are not always willing to give them up." The words: "I am sorry to say that," and the entire next sentence, "There are, of course, plenty of healthy children," etc., *are not in the original, but are additions made out of the whole cloth.* The next following sentences contain many inaccuracies, such as the translation of the German words *beträchtlich anschwollen* as "swelled up enormously," instead of "swelled up considerably." But the worst is the deliberate insertion of the following sentence, italicized in the pamphlet, *which also does not occur in the original:* "I can not yet say whether the boy will be consumptive in consequence of my treatment." The correct translation of Schreiber's words at the point where this closing sentence appears in the pamphlet is as follows: "I could discover no other alterations in the otherwise apparently healthy boy." [*Andere Veränderungen konnte ich an dem sonst gesund scheinenden Knaben nicht entdecken."*]

While I have said enough about this case to substantiate my charge of garbling and inaccuracy, I can not refrain from utilizing it also to show the utter misapprehension which the citation of detached sentences and paragraphs from medical articles is calculated to create in the mind of a non-medical reader. Even when the words are quoted correctly, they are likely, when detached from the context, to give rise to entirely false impressions. This is a criticism which applies not only to other examples cited in this pamphlet, but to a very large number of reports of experiments and of quotations from medical journals and books current in anti-vivisectionist writings, and the resulting dissemination of erroneous conceptions is often greater even than that caused by inaccurate or garbled quotations. A brief explanation of the present example will show the justification of this charge.

For what purpose did Professor Schreiber inoculate the boy with tuberculin? His article leaves no doubt as to the answer. He points out the importance of the earliest possible recognition of tuberculosis in a patient in order to secure the best curative results. The boy's mother had consumption and the author calls attention to the frequency of unrecognized tuberculosis in the offspring of tuberculous parents. The boy received a small dose—1 milligram—of tuberculin, which, if he were free from tuberculosis would produce no effect but which if he had unsuspected tuberculosis would produce a transient—though possibly a severe—fever, and a local reaction indicative of tuberculosis. Such reaction followed the injection of tuberculin, and the diagnosis of tuberculosis, which had not been, and very likely could not have been, made in any other way, was established. I do not know what could have been more fortunate for this boy than the recognition in its incipiency of a disease previously unsuspected and which, recognized thus early, should in all probability be cured by proper treatment. This tuberculin test is constantly employed to prevent the spread of tuberculosis in our cattle. In our children it enables us to discover the same disease in an early, curable stage. Shall we care for our cattle better than for our children?

Its use is not properly to be called an "experiment" at all. As I write this, I find in the Journal of the American Medical Association for Jan. 12, 1901, page 75, three cases of the use of tuberculin in human beings by Prof. J. M. Anders, who points out its value in enabling us to diagnosticate consumption "in latent forms and dubious cases, however incipient," long before percussion or the stethoscope will reveal the disease. I can imagine his surprise if he were charged with making three horribly cruel "experiments" and injecting the "germs of consumption!"

It is euphemism to call such an alleged quotation, in which words and one entire sentence are interpolated and another wholly changed in meaning, a "mistranslation" or even a "garbled and inaccurate" account. Does it not amount to literary forgery? It is another illustration of the fact that when an anti-vivisectionist attempts to say anything about scientific experiments either the moral sense is blunted or the truth-telling faculty is in abeyance. A good English example is the misstatements in Miss Frances Power Cobbe's book, laid bare by Victor Horsley, and Schreiber's and Sanarelli's cases will serve as excellent examples of American misrepresentation—if so long a word is needed to describe them.

I am sorry my reply is so long, but in fewer words I could not explain the many and gross errors to be pointed out. I have given you indeed "many" instances in which the references are "vague and inaccurate," and "some" in which the accounts are "garbled and inaccurate." These adjectives are, I submit, very mild ones to apply to such a pamphlet.

You can hardly be surprised after the extraordinary and repeated interpolations, mistranslations and worse which I have demonstrated in this letter that I am unwilling to accept *any* alleged quotation or translation emanating from the American Humane Association as accurate and truthful unless I can compare it with the source from which it is derived.

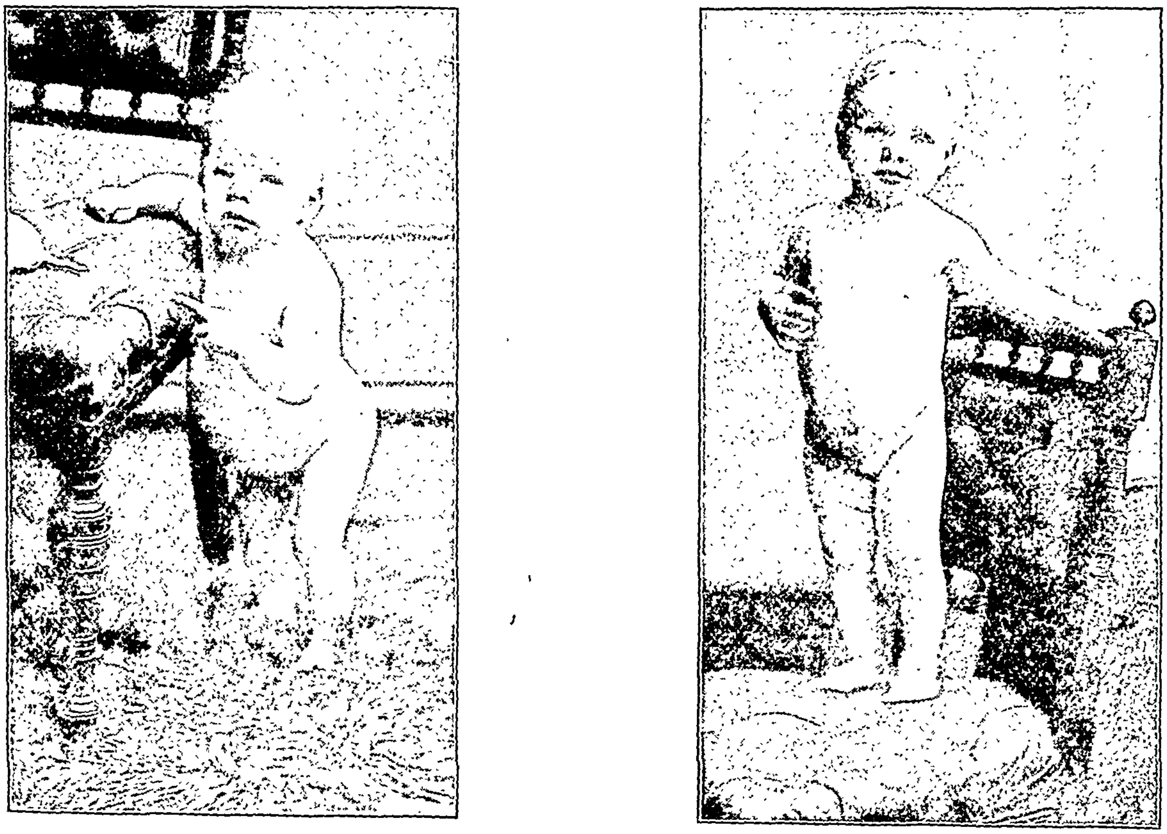
In conclusion let me commend to the "Humane" Association the closing words of President Eliot's letter, to be found on pages 218-9 of the "Hearing": "Any attempt to interfere with the necessary processes of medical investigation is, in my judgment, in the highest degree inexpedient and is fundamentally inhuman."

I shall take the liberty of publishing my reply. I suppose that you will not object to the publication of your letter with it in order to explain the reason for the reply.

Very respectfully yours, William W. Keen, M.D.

ADDENDUM.

Since this letter was written I have seen an article in "Gould's Year Book of Medicine and Surgery," 1901 (Medical Volume, p. 327), from the *Archives of Pediatrics* for June, 1900, p. 431, by H. Oliphant Nicholson of Edinburgh, Scotland, reporting the case of Annie C., a girl of 2 years and 8 months old, with pictures (see plate), which, with a brief statement of the case, well illustrates what Dr. Berkley has asserted, that "in proper cases, the results [of the treatment by thyroid extract] are among the most resplendent attained by modern medicine, converting the drooling dwarf into an intelligent, well-grown man or woman."



Illustrating Nicholson's article on thyroid treatment in a cretin (Arch. of Ped., June, 1900). Result of four months' use of thyroid extract.

This child was first seen by Dr. Nicholson on October 23, 1894, and the picture shows the "swollen, myxedematous-looking face and body, a markedly curved back and a pendulous abdomen." The child "could not walk without support and dragged her limbs slowly after her." Her vocabulary was confined to calling her mother and father "mum" and "ah," and "her wishes were wholly made evident by signs." Very naturally, therefore, with this low grade of intelligence, she was uncleanly in her habits.

The treatment was begun on October 30, with 2.5 grains of thyroid powder, once daily. This was reduced on November 2 to 1.25 grains once a day, and was continued for several weeks. As early as November 7, improvement was noticed. On November 17 the pulse at the wrist, which was scarcely perceptible through the swollen tissues at the beginning of the treatment, was distinctly felt, and by the 24th, the puffiness of the eyelids and forehead were diminishing and the expression of the face becoming more intelligent. The dose of the extract was now increased again to 2.5 grains. The results I quote as follows: "In about three months' time very few traces of cretinism remained and the child was able to walk about easily without assistance and was making use of the short words and gestures of early childhood. . . . After four months of the thyroid treatment, the improvement seemed so complete that the second photograph was taken and the likeness produced is that of a bright, happy, pretty child, to all appearances normal, both physically and mentally. The improvement continued till the middle of June, 1895, when, unfortunately, she contracted an attack of malignant measles and died on July 16, after three days' illness."

If Dr. Berkley's use of the thyroid extract, which cured two out of eight patients was an experiment, and its administration by Dr. Nicholson also was an experiment, the more of such happy "experiments" we could have, the better.

Tuberculosis Among Postoffice Employees.—The French statistics recently published indicate that tuberculosis is much more prevalent among the picked indoor employees of the post and telegraph service than in the general population, reaching 62 per 10,000, while the general mortality from tuberculosis at Paris is only 49 per 10,000. Tubercular affections represent 15.45 per cent. of the total mortality among the indoor employees, and 10 per cent. among those employed out of doors. Stricter regulations are to be enforced, according to a notice in the *Semaine Méd.* Each employee is to have "a health book" and at the first indications of a tubercular affecton is to be sent to a special sanitarium.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.

REUBEN PETERSON, M.D.
Professor of Gynecology Post-Graduate Medical School; Assistant Clinical Professor of Gynecology, Rush Medical College; President of the Chicago Gynecological Society.
CHICAGO.

(Continued from page 445.)

Morestin,[14] 1893. *Twenty-four dogs; ten bilateral, fourteen unilateral implantations; all died, except one, of peritonitis, nephritis, or hydronephrosis; survivor died several weeks later of hydronephrosis and infection.* Morestin experimented on twenty-four dogs with a view of uniting the ureters with the rectum. In ten cases a bilateral implantation was made. The method employed in six cases was to whip-stitch the intestinal mucosa about the ureter after the latter had been thrust into the rectum. The six animals died of peritonitis or ascending renal infection. In four cases the ureteral mucosa was sutured to the rectum. Of these, two died of infective peritonitis and two from uremia from compression of the ureters. In fourteen dogs unilateral implantation was tried, four times without and ten times with preliminary dilatation of the ureter by the application of temporary ligature. The first four animals died from peritonitis. In four cases where simple dilatation was practiced, three died of peritonitis, and one lived several weeks and died from hydronephrosis and infection. In the six remaining dogs, after previous dilatation, the ureter was sutured to the rectum laterally. All died from hydronephrosis or infection.

Morestin's conclusions are that bilateral implantation of the ureters into the rectum is entirely inadmissible, and single implantation only admissible in extreme cases. The primary *mortality in man should be less than in animals, because of* the larger size of the ureters and the possibility of securing better asepsis.

Thompson,[21] 1893. *Number of implantations not stated; one dog survived; after three weeks ureter and pelvis of kidney markedly dilated.* Thompson makes a brief mention of a successful implantation of the ureter into the small bowel. The exact method employed is not stated. The post-mortem at the end of three weeks showed the uretero-rectal union good, the ureteral orifice patent, but the ureter and pelvis of the kidney markedly dilated.

The hydronephrosis was ascribed in part to the stenosis and partly to the mobility of the intestine. The attempts to unite the ureter with the colon or rectum were failures.

Giordano,[6] 1894. *Sixteen dogs, three survived; pyelonephrosis; uretero-rectal stenosis.* Giordano, in order to do away with the dangers of implantation of the ureters into the bowel by the intraperitoneal route from his experiments on animals and cadavers, proposed the removal of a portion of the sacrum and an extraperitoneal route. In 1894 he published in detail a series of experiments in sixteen dogs, where the ureters had been implanted into the bowel extraperitoneally by lumbar incisions or through the sacral region. No microscopic or bacteriologic examinations of the specimens were made, and the descriptions of the gross specimens are exceedingly vague.

Out of sixteen dogs only three lived more than a week. In one case both ureters were implanted in the colon by lumbodorsal incisions. Death on third day; obstruction in left ureter; both kidneys congested.

In three cases this same operation was performed in two stages, first one and then the other ureter being implanted. One dog died from anesthetic at second operation, seven days after the first; ureter normal; kidney not enlarged.

The two other dogs lived one hundred and twenty-one and eighty-four days. The post-mortems revealed uretero-cutaneous fistulæ in both, associated with dilatation of the pelves of the kidneys, stenosis of the ureteral orifice and pyelonephritis.

In eight instances both ureters were implanted into the rectum. Of these, five died of peritonitis or sepsis, with congestion of the kidneys. One dog died from hemorrhage from the anus. In this case tubes had been used in the ureters. One animal lived seventy-seven days; autopsy showed fluid in abdominal cavity, due to intraperitoneal rupture of kidney abscess, other kidney being of normal size. In three cases the ureters were implanted in the rectum with the formation of an artificial anus; wounds were always infected and kidney congestion marked.

Giordano's conclusions are: that if the ureters are not obstructed there does not necessarily follow any infection of the kidneys. It is best to implant the ureters extraperitoneally and at two sittings.

Van Hook,[24] 1893. *Sixteen dogs; seven recoveries; two with one ureter in small intestine; pyelonephritis and uretero-rectal stenosis; five with one ureter in rectum; pyelonephritis in each case; uretero-rectal stenosis.* Van Hook implanted a single or both ureters into the small or large intestine in sixteen dogs. This experimenter's primary mortality has not been equalled before or since. This fact, together with the accuracy with which the post-mortem findings are recorded, warrants a careful study of his cases.

The following method of implantation was employed: After isolating the ureter with an ample fold of the peritoneum, it is severed and its end split upward with scissors a short distance. Two small needles armed with a single fine silk or catgut thread are passed from within outward through the split end of the ureter. The two needles are now carried downward through a small slit in the bowel and made to penetrate the bowel one-half inch below the point of entrance. The ends of the thread are tied, retaining the ureter in place. The knot is covered with Lembert sutures and the bowel opening closed as tightly as possible without compressing the ureters.

In two dogs a single ureter was implanted in the small intestine, eighteen inches above the ileocecal valve. Both recovered and were killed ten days later. The kidneys corresponding to the implanted ureters were found smaller and showed pyelonephritis. The opening into the bowel in both instances was somewhat stenosed and there were two drams of purulent fluid in the pelvis of the kidney and ureter.

In eight dogs one ureter was implanted into the rectum, with three deaths. Corresponding kidneys violently inflamed, being swollen, turgid and heavy, with muco-pus on the mucous membrane of the pelvis. Pelvis of the kidney, opened with a red-hot knife, contained a few drops of mucopurulent fluid. Uretero-rectal orifice patent. Microscopic examination showed violent hemorrhagic inflammation of the pelvis and pyramids of the kidney. Cultures showed numerous bacteria.

Five dogs recovered, and were killed from fourteen to twenty-one days after the operation. In three dogs, kidney corresponding to implanted ureters showed suppurative inflammation. Only the smallest probe could be made to pass the rectal opening.

In six dogs both ureters were implanted into the rectum. All died within six days. Four deaths due to general peritonitis. In two cases there was obstruction of the ureter and retention of urine in the pelves of the kidneys. Conclusions are that implantation of one of both ureters into the rectum is absolutely unjustifiable under all circumstances, because: 1, the primary risk is too great; 2, there is great liability to stenosis of the duct at the point of implantation; 3, suppurative uretero-pyelonephritis is almost absolutely certain to occur either immediately or after the absence of months or years.

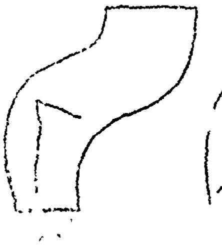
Chaput,[3] 1894. *Numerous dogs; number not stated; all died.* Chaput performed many experiments on dogs, making use of a great variety of methods in his attempts to anastomose the ureters with the rectum. His efforts were entirely unsuccessful. He ascribes his failures to the small size of the dog's ureter and to the great rigidity of the intestinal walls, causing the sutures to cut through and rendering union almost impossible. He thought that experiments on dogs would prove of but little value in determining the effects of ureteral anastomosis in man, as the bacterial contents of the dog's intestine were much more virulent and consequently more liable to give rise to serious lesions in the ureters and kidneys.

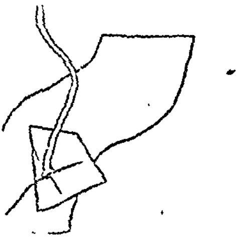
Mauclaire,[15] 1895. *Number of dogs not stated; upper part of rectum cut off and ureters implanted therein; all died.* Mauclaire, in order to avoid ascending infection when the ureters are implanted in the rectum for the cure of exstrophy of the bladder, amputated the rectum and inserted the ureters in its upper part after first establishing an artificial anus in the inguinal region. All the animals died of infection from the intestinal resection or from uremia resulting from the uretero-rectal implantation. For fear of leakage, he advises extraperitoneal implantation. While he was obliged, in dogs, to make the artificial anus in the inguinal region, his studies of the cadavers of young children have shown that the superior intestinal fragment can be brought down into the pelvis and the artificial anus established in the left ischio-rectal region.

Vignoni,[25] 1895. *Seven dogs, with one recovery; V-shaped flap; no report of findings.* Vignoni performed seven experiments on dogs, and succeeded in making only one live more than two months with one ureter in the rectum. He made use of a V-shaped flap cut out of the anterior wall of the bowel; after placing the ureters on this flap, the former are covered by suturing over them the lateral folds of the bowel wall. From these experiments Vignoni concludes that it is advisable to implant one or both ureters into the rectum for certain conditions.

Lindner,[11] 1895. *Number of dogs not stated; implantation into transverse colon, with satisfactory results.* Lindner, in a discussion of Trendelenburg's case of removal of the bladder, mentioned that in a series of experiments made a few years before on very large dogs, he had transplanted the ureters into the transverse colon and found that the urine passed per anum n a very satisfactory manner. The dangers of infection are ncreased when both ureters are implanted, and in order that he ureters may not pull out it is advisable to retain a portion f the bladder wall.

Kryński,[9] 1896. *Numerous dogs, number not stated; uretero-ctal stenosis, hydronephrosis, and infection; by new method ll recover.* Kryñski states he has proved that infection of he kidneys, stenosis of the ureteral orifices, and hydronephrosis will result from implantation of the ureters into the intestine by the usual methods. He then describes an operation, by following which he has never seen a single case of disease of the ureters or kidneys.





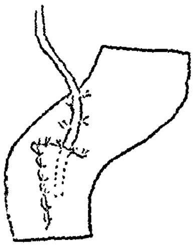


Fig. 3.

A triangular incision is made (Figs. 1, 2 and 3) through the serosa and muscle on the anterior inner margin of the gut just below the sigmoid flexure. The longest side of this triangle is 2.5 to 3 cm. in length; the shortest, 1 cm. A small incision is made in the mucosa at the apex of the triangle. The ureter is cut off obliquely, and is united to this incision by four interrupted sutures joining the rectal to the ureteral mucosa. The triangular flap is now sewed over the implanted ureter, a continuous suture being used for the long side and interrupted sutures for the short side. Too tight sewing of the triangular flap will produce an obstruction of the ureters.

Pisani,[18] 1896. *Two dogs; both died; collapse and peritonitis.* Pisani performed the following operation on two dogs: The abdomen was opened and a rectangular flap removed from the bladder, containing the ureteral orifices. The rectum was now isolated and an incision 3 to 4 cm. long made in its anterior wall. A portion of the posterior rectal mucosa corresponding to the bladder flap was freshened, and to this was sutured the flap containing the ureteral orifices. The anterior rectal wall was now sutured and the abdomen closed.

One dog died in sixty-two hours. Collapse and obstruction assigned as causes of death. Ureters not dilated. The flaps were united; kidneys normal; urine evacuated easily through rectum. The second animal died of septic peritonitis, caused by rupture of the abdominal wound. Evacuation of urine satisfactory; no dilatation of ureters.

Boari,[2] 1896. *Four dogs; four recoveries; two still living; in two dogs kidneys macroscopically normal.* (?) Boari, by means of his anastomotic button, succeeded in uniting the ureters to the rectum in two dogs. The first animal lived fifty-two days after the left ureteral implantation and fifteen days after the right. The ureters were not dilated. The right ureteral opening was surrounded by a small papilla-like valve. The kidneys macroscopically showed no grave lesions. There was no hydronephrosis, although the pelvis of the right kidney was slightly dilated. The second dog was killed thirty-two days after the implantation of the right ureter into the rectum. The macroscopic appearance of the kidney was normal and the pelvis of the kidney was not dilated. Two more animals had been operated on successfully, and were still alive at the time of the report.

Lestrade,[10] 1898. This experimenter implanted the ureters into the rectum in four dogs, using Chalot's anastomotic button, but the animals all died of sloughing of the sutures and escape of urine into the peritoneal cavity.

Martin,[12] 1899: *Forty-two dogs, five recoveries; pyelonephritis; numerous bacteria in kidneys; chronic interstitial nephritis.* Martin presented before the Chicago Gynecological Society the specimens and post-mortem findings from three dogs where the ureters had been implanted in the rectum. The animals had lived four, eleven and ten months, respectively, after the operations. In one case both and in another a single ureter was implanted in the rectum. In the third dog one ureter was implanted in the jejunum eight and one-half inches from the pyloric orifice. The rectum acted as a perfect substitute for the bladder in all cases.

The post-mortem showed marked changes in the kidneys corresponding to the implanted ureters. There were evidences of an active pyelonephritis in two dogs, as shown by the presence of purulent fluid and numerous bacteria. In one dog a very few coli bacilli and diplococci were found in the pelvis of the kidney. The kidney was smaller than the other and presented interstitial changes, resulting from an old pyelonephritis. Thirty-four dogs were operated on and only three survived. The implantation was made perpendicularly to the axis of the intestine.

The author publishes in the same month a new method of implantation of the ureters, having for its object the making of subsequent infection of the ureters and kidneys impossible. The ureters are buried in the walls of the rectum for a distance of an inch or more longitudinally, so that the ureters may be milked downward by the contraction of the bowel-muscles artificially surrounding the ureters. The ureters are dissected away from the peritoneum for three inches by the finger. Longitudinal incision, two inches in length, is now made in the peritoneal and subperitoneal tissue of the bowel. The remaining coats of the bowel are opened by a small incision, through which are passed two needles, to which are attached silk ligatures passed through the coats of the bowel below the incision and the ureters made taut and attached to the fibrous and muscular coat by silk sutures, care being taken not to penetrate more than the fibrous coat of the ureters. The peritoneum is now closed about the ureters by a continuous suture.

Dr. F. R. Zeits' examination of a dog operated on three months previously by this method showed both ureters patent: suppurative nephritis existed in the right kidney; pelvis normal; bacteriologic examination negative. Left kidney shows chronic interstitial nephritis; capsule slightly adherent; pelvis normal. Bacteriologic examination of right kidney showed coli communis present; none in the left.

Matas,[13] 1899: *Four dogs—two with Boari button and two Maydl's operation—all died; first two, renal infection; last two, peritonitis.* Matas employed Boari's technique in two dogs and united the intestine to the ureters, but the dogs died from acute ascending renal infection. In two dogs in which the Maydl operation was tried, one died in twenty-four, the other in thirty-six hours. In both the vesico-ureteral grafts were perfect. In both there was septic peritonitis, caused by infection from the bowel at the time of the operation, and in the dog that survived thirty-six hours there was also intense hyperemia of the kidney.

Kalabin,[8] 1899. *Thirteen dogs; Maydl's operation five times, five deaths; one dog survived one month; kidneys normal; ureteral orifices patent; one survived thirteen months: showed interstitial nephritis.* Kalabin, to verify Morestin's experiments of implantation of the ureters into the rectum, experimented on thirteen dogs. Maydl's operation was performed on five dogs; three died of peritonitis, two of uremia.

In four dogs he implanted a single ureter into the rectum. Three of the four died; two of peritonitis, one of uremia. The fourth dog lived a month; post-mortem showed kidneys *normal*. In four other dogs where a single ureter was implanted in rectum, two died of peritonitis and one of uremia; one dog survived thirteen months. The kidneys showed an interstital nephritis. The ureter and rectal mucous membrane were normal.

Frank,[5] 1900: *Uretero-rectal anastomoses; number of dogs not stated; infection in every case; vesico-rectal anastomosis with Frank coupler, fifteen dogs, ten recoveries; five post-mortems show but slight changes in kidneys.* From his experiments on implantation of the ureters into the rectum, Frank's conclusions were that infection of the kidney supervenes in every case and that no better results could be looked for in the human being. In order to preserve the ureteral orifice intact and thereby prevent an ascending kidney infection, Frank, by means of his bone coupler, made a communication between the bladder and the rectum in fifteen dogs, with ten recoveries. For a week after the operation urine and feces were voided oftener than after this period. The feces are always passed in a liquid form, being softened by the urine. Two dogs operated on six months previously are alive and well. In the five dogs in which post-mortem findings are reported, two show colon bacilli in the kidneys; one is not free from bacteria, but they are neither colon bacilli nor staphylococci; two cases show histologic changes in the form of round-celled infiltration. In one case the left kidney is noted as congested and the ureter enlarged to double its normal size.

Frank's conclusions are that the recovery of the dog and the macroscopic appearance of the tissues do not necessarily signify absence of infection; that the dogs killed thus far show that the operation of vesico-rectal anastomosis can be performed without a resulting kidney infection.

(To be continued.)

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YELLOW FEVER AND ITS TRANSMISSION.

The results of the experiments of Drs. Reed, Carroll and Agramonte, as published in our last issue, are certainly remarkable and convincing. That yellow fever is transmissible by the mosquito is proved, and that our previously-held theories of its propagation must be amended can not be denied. Some even hold that it leaves us nothing to do in the way of quarantine and disinfection, and this view is largely taken at once, offhand, by the lay press generally, and by some of the members of the medical profession. These seem to have at once assumed that the questions are settled and that the quarantine precautions of the past have been useless and can be dispensed with in the future. The problem of yellow fever is held by them to have been solved.

This we feel assured is not the conclusion that the more conservative authorities will admit. The results were most striking and must assuredly throw a doubt upon all former theories of infection, etc., but any one accustomed to weighing evidence must acknowledge that much yet remains to be demonstrated before we can positively say that the disease is not transmitted in other ways than those indicated by the experimenters. The comparison with the malaria discoveries, which themselves still lack something of absolute completeness, is not entirely applicable. We know the malarial organism and to a great extent its life history, though there are yet some points requiring knowledge. The germ of yellow fever, however, is still in dispute and these investigations themselves oppose the validity of the only organism heretofore recognized as such. Not knowing even the existence of the germ except by justifiable inference, we know nothing of its peculiarities except that it appears, like the malaria germ, to be transmitted by mosquitoes and to require a certain period for its life cycle. As far as the investigations have been reported, it does not seem positively proved that it has for its host any one exclusive form of mosquito, and there are yet variances between the views of such an experienced clinical observer as Dr. Finlay, the originator of the mosquito-transmission theory, and the findings of the experimenters. There is a close resemblance in method and results between these experiments and those of Drs. Sambon and Lowe on malarial transmission, but the latter only finished off in full the chain of facts that led almost inevitably to the conclusions they demonstrated.

Admitting, however, as it seems probable we shall be compelled to do, that the mosquito-borne theory of yellow fever transmission is correct, it does not necessarily follow that all the former precautions are useless or even that there may not be other methods of introduction of the infection into the human system. The experiments with fomites appear to be almost, if not absolutely, conclusive, but conditions might occur that were not realized in these experiments. We have to consider the fact that the subjects of experimentation were men in good general health, and their morale and the psychic surroundings, so to speak, were of the best character to make them resistant to contagion. This last—the psychic element—is one that is not to be slighted, as clinical experience has amply proved on numerous occasions.

The utility of disinfection, if not of quarantine, has been repeatedly demonstrated; if ships, cargoes, and fruits can not convey the germs in a way to be directly dangerous, they can none the less convey the infected mosquitoes. These insects, as is well known, are often carried long distances by public conveyances, and this is very probably the origin of many local outbreaks of yellow fever, hitherto attributed solely to fomites.

The experiments of Drs. Reed, Carroll and Agramonte mark a great advance in our knowledge of yellow fever, and we do not in the least discredit them. For them to be accepted as conclusive, however, and as overthrowing at once all former notions, is not exactly the scientific course; they point the way to other observations which must be chiefly clinical and confirmatory. The organic cause of yellow fever must be sought out and its life history determined. The facts already obtained must guide us to others, but though it seems to us probable that all the apparent consequences of these experiments may yet have to be accepted, in the meanwhile it would be foolish to think of neglecting all hitherto accepted safeguards against the disease, as some are intimating should be done.

A PLEA FOR ADEQUATE DOSAGE OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA.

It seems like a repetition of ancient history to dwell at this day upon the life-saving power of diphtheria antitoxin and to cite statistics showing the reduction in mortality that has been effected by its employment. The time has passed when there can be any difference of opinion on these points. One feature, however, can, it seems, be profitably discussed, inasmuch as the antitoxin is not universally administered in doses capable of yielding the maximum beneficial effects, partly as a result of a not unnatural conservatism and partly from the want hitherto of comparative data of convincing value. From a number of sources the recommendation has of late been made for the employment of larger doses of antitoxin than has been customary, especially as the agent is capable only of good, and no seriously ill consequences can be attributed to its action. For those who may have felt any doubt in this connection the publication, recently, by Dr. J. H. McCollom,[1] of the statistics for the South Department, a hospital opened in Boston in 1895, for the treatment of cases of diphtheria exclusively, must bring conviction.

It appears that since a record of cases was begun in 1878, Boston has suffered more from the inroads of diphtheria than any other large American city. Although a marked reduction in the mortality has been effected in recent years, the number of deaths from this disease in 1894 was 817, and in 1898, 170. The case-mortality has ranged from 35.7 per cent. in 1881 to 9.76 per cent. in 1899, and the disease in the latter year was of an extremely virulent type. While the ratio of mortality from diphtheria, for 10,000 of the living in Boston, in 1893 was more than 11 and in 1894 more than 19—being higher than in London, Liverpool, Glasgow and Paris, as well as New York, Philadelphia, Brooklyn, Chicago and St. Louis—by 1898 it had fallen to 3, and in 1899 it was 4.9, as low as in some and lower than in others of the cities named. This reduction coincides with the opening of South Department in 1895, when every case of diphtheria admitted was treated with the antitoxin. Prior to this year only about 10 per cent. of the reported cases were treated in hospitals, while in succeeding years 50 per cent. were so treated.

The excessive prevalence of diphtheria in Boston is shown by the fact that the ratio of morbidity in 1895 was 81, and in 1899, 51; while in Glasgow it was in 1898 only 5.9, in London 25.62, in New York 37.06, and in 1899 in New York 38.77. With the reduction in the morbidity ratio in Boston there has been also a reduction in the mortality ratio per 10,000, from 11.73 in 1895 to 4.99 in 1899, and in the case-mortality, from 14.48 per cent. in 1895 to 9.76 in 1899. Prior to 1895 the mortality rate from diphtheria in the Boston City Hospital was 46 per cent., while in the five years that the South Department has been in operation—and 7657 cases were treated—the mortality has been 12.09 per cent. Of this number 772, or 10 per cent., required operative intervention. In 100 others, marked laryngeal symptoms were present, but the stenosis was relieved by the antitoxin. The mortality in cases requiring intubation was 34 per cent. This is due in part to the fact that the serum was administered in large doses when there was any indication that the membrane was extending into the bronchi.

The guiding rule in the administration of the serum is that it must be given until the characteristic effects are produced, namely, shriveling of the membrane, diminution in nasal discharge, correction of fetid odor and general improvement in the condition of the patient, whether 4000 or 70,000 units be required. The injunction is laid down that no case of diphtheria in the acute stage should be considered hopeless, but antitoxin should unconditionally be administered. In illustration of the advantage of the early administration of antitoxin, it is pointed out that, since September, 1895, there have been 101 cases of diphtheria among the staff of South Department, contracted in the line of duty, without a single death. Each patient received a full dose of 4000 units at the outset, or as soon as there were any symptoms of the disease. In some instances it was not necessary to repeat the dose, while in others it was repeated two or three times. In none was there any marked paralysis or any heart complication, and the duration of the illness was comparatively short. Altogether, small doses of antitoxin proved of little avail in the treatment of grave cases, but the best results were yielded by heroic doses. When death occurred it was due to nerve degeneration or septicemia. In no instance was any injurious effect produced by either large or small doses of the antitoxin.

In view of all of the evidence there can no longer be any excuse for failure to administer the antitoxin in every case of diphtheria, mild or grave, and the earlier the better, in dosage sufficient to bring about the desired result.

SCIENTIFIC USE OF HOSPITALS.

Sir Michael Foster discourses upon this interesting topic in a recent magazine article.[1] While much that is already known must be learned by the medical student. there remains a vast extent of unknown that must be learned before the healing art may gain the mastery of disease desired so much by all. Our hospitals offer great opportunities for gathering new truths, but unfortunately adequate use is not made of these opportunities, not only in England but also in this country, and quite likely elsewhere as well. Sir Michael Foster meets the constantly recurring agitation against hospitals being used for the purposes of experiment—which is the favorite phrase of those misdirected persons who hold that hospitals ought not to serve for advancing knowledge—by pointing out that every sick person who seeks medical aid makes himself the subject of an investigation, that no physician or surgeon is ever absolutely sure of the result of his act, while the knowledge gained by the result thereof is always made of use to others.

Thus every hospital and every doctor's office becomes the daily scene of a continued series of experiments, each for the special and immediate benefit of the patient who is subjected to them. And rightly used this newly gained knowledge makes for the welfare of succeeding patients, each increment of knowledge meaning decrement of human suffering. The welfare of the individual patient and the advancement of knowledge go hand in hand. Looking at the daily work of a hospital in this broad way, is not Sir Michael Foster in the right when he ventures the criticism that the analysis of the phenomena observed at the bedside and in the laboratory is only too often not so exact, so complete and so systematic as it ought to be?

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[1] Boston Med. and Surg. Jour., 1900, No. 25, p. 627.

[1] The Nineteenth Century and After, January, 1901, 57-63.

Such analysis demands the use of exact methods and of the instruments of precision of physics, chemistry, and biology.

A few test-tubes, an alcohol lamp, and a microscope are no longer adequate for the exact and complete analysis of the phenomena of disease, which now requires clinical and other laboratories fully equipped with a variety of appliances. These laboratories are distinct from educational laboratories because they are to be used for the direct and special benefit of the patients. A complete study and analysis of this character may be of great use in determining facts of signal importance as regards the nature of the patient's disease; data may accumulate for the purpose of subsequent inquiry and study; but the highest value of the results of proper analysis lies in their use to throw light on the nature of disease. This means the institution of a series of inquiries with definite ends in view. Every surgeon and every physician, from the chief down to the lowest grade, should be animated by the spirit of inquiry and research; even then but a fraction of the problems presented could be properly handled. "The harvest of truth is plentiful, but the laborers are few."

Sir Michael Foster's assertion that the great hospitals of London are behindhand in equipment and in the kind of work that advance medical knowledge is true when applied to most of our own hospitals as measured with his standard even though it was what he heard on this side of the water during his recent stay here that led to the thoughts put forth in this article! The organization of the majority of our large hospitals is utterly inadequate to make scientific use of the opportunities offered for advancing medical knowledge. A hospital with its wards and its scientific equipment is in reality a great medical laboratory whose duty it is to heal the sick and to increase knowledge, the two being inseparable. It may confidently be asserted that where the second duty is not or can not be performed properly, there the first also suffers neglect.

THE ARMY MEDICAL SERVICE.

Under the army reorganization act, which has now become a law, the medical corps is enlarged from a total of 192 to 321 medical officers, including the surgeon-general with the rank of brigadier general, 8 assistant surgeon-generals with the rank of colonel, 12 deputy surgeon-generals with the rank of lieutenant-colonel, 60 surgeons with the rank of major, and 240 assistant surgeons with the rank of first lieutenant, mounted, for the first five years, and the rank of captain, mounted, thereafter until promoted to major. There are now, therefore, 129 original vacancies in the corps of assistant surgeons, and the war department has published a circular of information for candidates seeking these positions, which can be obtained by application to the Surgeon-General of the Army, Washington, D. C. The examinations, which will be held at an early day, are both physical and professional. Candidates must be citizens of the United States, between the ages of 22 and 29, except in cases where they have served honorably in the Army of the United States as commissioned medical officer of volunteers or as acting assistant surgeon when the age limit is raised to 34 years. Permission to appear before the board is obtained by letter to the Secretary of War, which must be in the applicant's handwriting, giving date and place of birth and be accompanied by certificates, based on personal acquaintance, from at least two reputable persons, as to citizenship, character and habits. The examinations are thorough, the professional one both oral and written and including also clinical bedside diagnosis and prescriptions and operations on the cadaver. Candidates must also show evidence of at least one year's hospital experience or at least two years of private practice since graduation. Degrees from other than medical schools approved by the board, or first-class teachers' certificates, will usually exempt the candidate from examination in other than professional subjects, but any evidence of deficiency in general education on elementary subjects will subject the candidate to a special oral examination in arithmetic, history, geography, literature, and physics, which if not satisfactory will be cause for his rejection. Candidates claiming especial knowledge of higher mathematics, languages, drawing, chemistry, or branches of natural science will be examined in those subjects as accomplishments, and will receive due credit therefor according to their proficiency.

To save needless expense to candidates, a preliminary physical examination may be undergone by special permission, at the nearest military post or recruiting station, but any opinion from such will not be binding on the regular examining board.

The merits of the candidates in the several branches, and their relative merit as shown by the whole examination, will be reported by the board, and in accordance with such report, approved candidates will be appointed to such vacancies as may exist within two years. No allowance will be made for expenses of persons undergoing examination.

The pay of an assistant surgeon for the first five years is $1600 per annum; after promotion to captain's rank it is $2000, which, with the 10 per cent. increase for five years' service, is $2200. After ten years' service as captain the pay is $2400. The pay of a surgeon with rank of major is $2500 with 10 per cent. added for each five years of service, till after twenty years it is $3500. Liberal allowance for quarters, where not furnished, traveling expenses on duty, and other perquisites should be counted as adding to the remuneration.

Since 1893 an army medical school or special course has been authorized and maintained at the Army Medical Museum, Washington, for the purpose of instructing medical officers who have been appointed since the last preceding term of school and such others as may be authorized to attend. The course covers five months, commencing in November, and includes the subjects of the special duties of army medical officers, customs of the service, military hygiene, etc., so that the newly-appointed officers do not go at once unprepared to their new duties.

It will be noted that the chances for appointment are not limited to the vacancies now existing, but include whatever vacancies may occur within two years of a successful examination. At no time in the past have the opportunities been better for qualified young physicians to enter the regular army medical corps, than at the present time.

The army career promises to the young surgeon steady employment with constantly increasing pay and the prospects of retirement with reasonable compensation at the age when one would feel ready to be relieved of active duties. While it does not promise the rewards of exceptional success in general practice, it certainly does giver better prospects than the average practitioner can reasonably expect. The social position is good, the chance for self-improvement and scientific work is ample. The government is liberal at its posts, with instruments, means and journals, and any physician with a scientific turn of mind will find himself favorably situated to follow out his specialty. While in some respects the practice is limited and some of the posts to which a physician may be sent are not desirable, changes are always likely to take place for the better.

PROPRIETARY MEDICINES AND THE REVENUE STAMP.

A portion of the lay press is up in arms against the senate modification of the revenue bill that keeps up the stamp tax on proprietary medicines with secret formulæ. It is easy to see the motive of the opposition: the patent medicine advertiser is one of the chief sources of income of many newspapers and whatever is against his interests is against theirs also. This is no reason, however, why the interests of the public should not be held as above those of owners of private formulæ and advertising publishers. Patent medicines, so-called, are as a class directly harmful to the public, and it is unfortunate that the tax is not great enough to put them out of existence. But failing this, there is no reason why they should not contribute to the government revenues. It will, moreover, be a distinct advantage to the medical profession to know by a government mark, at sight, what preparations are ethical and what are not. The amended bill is now before a conference committee, and we trust that this senate amendment will go through unchanged.

A CENSORSHIP FOR ARTICLES OF THE MATERIA MEDICA.

The choice of drugs in the treatment of disease is daily becoming increasingly difficult, not only on account of the large number being constantly exploited, but more especially by reason of uncertainty as to their nature and efficacy. Only one who has been placed in a position requiring a clear-cut decision can realize how great, at times, is the difficulty of forming an opinion as to the medicinal value and the ethical standing of a large number of preparations on the market at the present day. We fear that often the most advertised remedies—sometimes irrespective of their merits—are those that are most largely used. For these reasons we sincerely join in the hope recently expressed editorially,[1] that the near future may see established "a proper censorship, to act as a directing agent, protecting the profession from deception," whose duty it shall be to decide as to the therapeutic value and the ethical character of all, and especially new, drugs and combinations of drugs, as well as a host of allied substances, such as glandular extracts, artificial foods, food-substitutes, and the like, offered to the medical profession. As matters stand, guilty and innocent among manufacturing pharmacists must suffer alike, to the detriment and the disadvantage of the practitioner of medicine.

FATALITY OF THE RATTLESNAKE.

A paragraph is going the rounds of the lay press that, according to the statements of a prominent professor in the University of Chicago, death from rattlesnake bite is a great rarity. He is reported as saying that for twenty years he has sought in vain for an authoritative case of death from that cause, and though many reports have been investigated they have proved unfounded. Only recently has he come upon a genuine case, and it is sufficiently remarkable to make it especially notable as an exception to the general rule of the non-fatality of rattlesnake bite. It is only fair to state, in this connection, that the professor referred to is not a medical man and is not connected with the medical department of the university. This will probably account for the ill success of his researches to discover fatal cases; if he had consulted medical literature or had a wide acquaintance with medical practitioners, the results would have been different. It is true that popular ideas of the deadliness of snake bites are exaggerated, and that the bite of some of the smaller and more common species of the Crotalidæ are not as serious as those of the larger ones. There is, however, ample reason to avoid such accidents, and if deaths are rare they *nevertheless* are frequent enough to justify the common dread of these reptiles. It would be unfortunate should such utterances be credited to the extent of leading any one to needless risks or to avoid necessary precautions as regards bite from poisonous snakes.

JAMAICA-GINGER DRINKERS' AMBLYOPIA.

Since 1897 a number of cases of amblyopia from the use of extract of Jamaica ginger have been reported in medical journals, two of which having appeared within the last month. In all cases the cause of the symptoms has been credited to the ginger constituent, and some speculation has been indulged in as to how it could produce the retrobulbar neuritis or whatever other lesion was assumed to be its underlying pathologic condition. Aside from these observations, there is no evidence of any such special toxic action of ginger. It may, if taken in excess, be irritating to the stomach or throat, but it has otherwise no record to place it among the active poisons to the nervous system. This fact has been one of the puzzles to the reporters of these cases. Alcohol in excess, especially with tobacco, can cause the symptom, but the ginger-essence drinkers do not appear to have imbibed enough alcohol to thus account for it; at least it was not so credited. Now, however, there comes a report from Baltimore that certain manufacturers or wholesale druggists have been putting out on the public an essence of ginger the alcoholic constituent of which is methyl alcohol, or possibly what is called methylated spirit, instead of the more expensive ethyl alcohol, a substance which Casey A. Wood[1] and others have shown to be quite capable of producing amblyopia, not merely when ingested internally, but also when inhaled or otherwise absorbed in its concentrated form. This, if true, and it is said that the accusation is backed by the Medico-Chirurgical Faculty of Maryland, will go far to account for the misfortunes of the ginger-essence topers who are said to exist in large numbers in the dry towns of Maryland, West Virginia and Pennsylvania. The way of the transgressor whose appetite for alcohol leads him to indulge in drug substitutes is hard in many ways, and this is only one of them. It is likely, moreover, that the transgressing druggists may also find themselves embarrassed with damage suits and a more or less dilapidated reputation.

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[1] Merck's Archives, January.

THE HEALTH OF THE ARMY IN THE PHILIPPINES.

The annual report of Col. Charles R. Greenleaf, assistant surgeon-general U. S. A. and chief surgeon of the division of the Philippines, contains a number of interesting facts. He shows that the percentage of non-effectives in the forces has decreased, but he thinks that sickness and mortality can not be expected to decrease in the future as the effects of tropical exposure are cumulative. In cases of reduced vitality from tropical diseases, a return to the United States is an imperative necessity, and this is accentuated by the effects of nostalgia and mental strain due to the special character of the service in the small posts and the assassinating methods of the insurgents. For want of a better name, the mental state thus induced is called insanity, but it is often completely cured by the journey home. It is evidently a state of neurasthenic depression hardly deserving the name of insanity. While somewhat pessimistic in tone in some respects the report still gives encouraging facts. With improved sanitation, Dr. Greenleaf believes the sickness could be reduced by nearly one-half; the embarrassments in obtaining this are due chiefly to the shortage of medical officers—there are only 233 effective to supply over 400 posts, supervising duties, general hospitals, China details, etc., taking up the remainder of the already inadequate force of 336 surgeons in the archipelago. This is one of the worst features of the situation and is aggravated by the unavoidable inexperience of many of the acting assistant surgeons, who have to fill out the number and supplement the small number of regular army officers. Other features of interest in the report are the data as to prevalent disorders, among which we find that venereal disease, that special scourge of the British army in the tropics, has only a very subordinate place; the remarks on the army ration, on leprosy, etc. The report, while brief, is a most interesting medical document, and one that is an important contribution to military medical literature.

TREATMENT OF CHRONIC CATARRHAL DISEASE OF THE MIDDLE EAR BY MEANS OF INTRATUBAL INJECTIONS OF PILOCARPIN.

In many cases of impaired hearing dependent on catarrhal and adhesive processes in the middle ear, considerable improvement can be effected by patient, persistent and systematic treatment of the nasopharynx and the ear itself through the Eustachian tube. In some, however, the auditory defect is extremely resistant, and, together with tinnitus and other manifestations, may be a source of great annoyance and distress. Surgical measures have been proposed in the treatment of such cases, but the results can not be said to be as brilliant as the character of the therapeutic procedure would justify hope of their being. Some twenty years ago Dr. Adam Politzer, the distinguished Vienna otologist, recommended subcutaneous injections of pilocarpin hydrochlorate in the treatment of certain chronic affections of the middle and the internal ear. A number of years later he began to make the injections directly into the ear through the Eustachian tube, instead of beneath the skin, with good results. Other observers have not reported equal success, but Fischenich[1] summarizes the results of his experience in 120 cases of various forms of disease of the middle ear, attended with catarrh, sclerosis and adhesions. The cases were principally such as had proved unyielding to other methods of treatment, and the impairment of hearing was generally marked. The manipulation, which is preceded and followed by ordinary catheterization, consists in the introduction into the middle ear, through a large aural catheter, of an appropriate elastic catheter with a large central opening, followed by the injection of from 6 or 8 to 10, 12 or 16 drops of a 2 per cent. aqueous solution of pilocarpin hydrochlorate. The injection is immediately followed by vertigo and pain, which, however, soon subside. The number of injections varies between thirty and fifty, in accordance with the severity of the case. The course of treatment is to be concluded by a series of insufflations of air. The resulting improvement often continues after the treatment has been suspended.

THE INJURIOUS CONSTITUENTS OF POTABLE SPIRITS.

Inasmuch as all forms of spirit ordinarily drunk contain ethylic alcohol in common and largely, the varying effects to which they give rise qualitatively must be due to the presence of other substances. Among these are aldehyd, compound ether, fusel oil, and certain volatile basic bodies. These are present—and more particularly the aldehyd—in larger amount in raw than in matured spirit; and it is probably for this reason, among others, that ripe spirit is preferred and that its use is followed by less unpleasant secondary effects. Some experimental observations recently recorded by Brunton and Tunnicliffe,[2] go to confirm the opinion that the especially troublesome effects of intoxication with spirits is due not so much to the ethylic alcohol as, in part at least, to the aldehyd, and especially that known as furfural. This is derived from a class of substances designated pentosanes, which are present in the cellulose of the grain husks used in the preparation of various forms of spirit. It was found experimentally that furfural in active doses causes paralysis of voluntary muscles, and, later, clonic and tonic convulsions, with rapid and irregular breathing—all of a remarkably transient character. From smaller doses ataxia, tremors and twitching, especially of the facial muscles, resulted. In man pain developed at the back of the neck, extending to the occipital region, with a sense of throbbing and pulsation in the vessels of the head, and followed by dull headache for some time. On removal of the aldehyd from the spirits used recovery was much more sudden and accompanied by less marked secondary symptoms. The animals, instead of being restless and evidently uncomfortable, refusing food and exhibiting signs of bad temper, were quiet and soon restored to the normal. These observations emphasize the necessity of ensuring the purity of articles for internal consumption, whether for dietetic or for medicinal purposes, and they raise the question whether it were not preferable, as has often been urged, when alcohol is indicated in the treatment of disease, that a chemically pure article of this, rather than whisky, brandy or wine, should be used.

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[1] Jour. A. M. A., xxxiii, p. 1653.

[1] Berliner Klin. Woch., 1900, No. 46, p. 1033.

[2] The Lancet, Dec. 8, 1900, p. 1653.

Medical News.

CALIFORNIA.

The Oakland Medical College's new building will be ready for the reception of students by September 1.

Dr. Paul S. Anderson, Redlands, has been appointed assistant health officer of San Bernardino County, vice Dr. Gayle G. Moseley, resigned.

The Woman's Hospital has been incorporated at Los Angeles, with a *capital stock of $20,000. It is to be devoted* entirely to the needs of *women.*

The death-rate of Los Angeles for January was the highest in the records of that city—28.22 per 1000 *per annum.* Of the 241 deaths, 93 were from diseases of the respiratory system, 178 of the 241 were from other than the Pacific coast states.

The County Hospital, just erected at Riverside at a cost of $20,000, has been found too small for its intended purpose. The county board of supervisors has purchased eight acres of land adjoining the hospital, on which it is proposed to erect two ward-cottages.

FLORIDA.

Dr. Joseph Y. Porter, Key West, state health officer, was elected a member of the legislature.

Dr. Luby S. Smith, quarantine officer at Carrabelle, has been made special agent of the State Board of Health at Arcadia.

Dr. Marcellus McCreary, Pensacola, has been appointed a member of the board of medical examiners for the First Judicial District, vice Dr. Charles B. McKinnon, resigned.

GEORGIA.

The Atlanta Board of Health has requested the city council to define its duties, especially as to the treatment and handling of smallpox cases. The council *is also asked* either to give the board a free *hand or to relieve* it of this portion of its duties.

Proprietary medicines are to be inspected by the state commissioner of agriculture, whose decision as to their usefulness and wholesomeness is to be final. The especial qualifications of the chief of agriculture, who is supposably a layman, to pass upon these matters, however, are not clear.

ILLINOIS.

Chicago.

Dr. Andrew McDiarmid has petitioned the circuit court to be allowed to resume his family name of McDermid.

Dr. John S. Marshall, one of the board of three appointed to examine applicants for the position of dentist in the army, reported for duty to the Surgeon-General, February 17.

The mortality for the week ended February 16 was 504, a death-rate per 1000 of 15.46 per annum. Violence caused 30 deaths and disease of the respiratory system 195; 105 persons died who were over the age of 60, and 98 infants under 1 *year; 298 males and 206 females died.*

The Chicago Lying-In Hospital reports that the demand for rooms is so great that an immediate enlargement of the building is imperative. Plans have been prepared and it is hoped that the work may be started in the spring. During the year just past 974 patients have been treated and 11,129 visits made.

Virtue of Vaccination.—The commissioner of health calls attention to the freedom of the police force from smallpox. No known case of the disease has occurred among members of the force in more than seven years, and this immunity, notwithstanding their frequent exposure, is due solely to the enforcement of vaccination. Similarly as to school children, among an average yearly *population of more* than 250,000 public and parochial school pupils, there have been only four known cases of smallpox in the last ten years, and these were in children admitted to school on fraudulent certificates of vaccination. As object-lessons of the virtue of vaccination these facts are sufficiently striking.

The Public Health Conditions.—These are still satisfactory. There has been no such increase of throat and lung diseases as might have been anticipated from the meteorologic conditions of the past fortnight and the contagious diseases of childhood—diphtheria, scarlet fever, measles and whooping-cough—are neither usually prevalent nor fatal. The smallpox situation remains unchanged—only 17 new cases during the week. At the close of the previous week there were 44 cases in the Isolation Hospital; 17 were admitted during the week, and 23 discharged, with no death, 38 remaining under treatment. With one exception the cases are mild and promise speedy recovery. The commissioner of health announces that the stock of glycerinated vaccin lymph on hand has ripened sufficiently to make resumption of vaccination safe.

INDIANA.

Dr. Walker Schell, Terre Haute, returned from his European trip, February 13.

Dr. Ernest Moraweck, Tell City, has returned after several years' study in Vienna, and will locate in Louisville, Ky.

A bill has been introduced in the house increasing the salary of the secretary of the State Board of Health from $1200 to $2800, and requiring him to devote his entire time to his official duties.

The Dowie heresy and its prototypes will continue to *flourish* in Indiana if the senate upholds the action of the *committee which* recommended the indefinite postponement of a bill providing *that a physician must* be called in case of sickness of children *or dependents,* and providing further a penalty in case of the death of a child or other dependent without *medical attendance.*

IOWA.

Dr. John W. Lauder, Afton, was elected state physician of the Modern Woodmen of America on February 13.

Dr. Fred W. Powers, Reinbeck, has been appointed to the position on the State Board of Health made vacant by the resignation of Dr. Joseph A. Scroggs, Keokuk.

Dr. James F. Presnell, acting assistant-surgeon in the army, formerly a practitioner in Lake View, has been nominated by the President as assistant-surgeon with the rank of captain.

KENTUCKY.

Dr. Marion G. Milan, who has been health officer of Paducah for six years, has resigned.

Dr. J. Hunter Peak, Louisville, who was recently deposed as local pension examiner, has been appointed special medical examiner of the Bureau *of Pensions* for the District of Kentucky.

Health Needs of Louisville.—Dr. Mavarell K. Allen, health officer of Louisville, states officially that the chief needs of his department are a city chemist, better facilities for protecting child-life against *infectious* and contagious diseases, proper disinfection of houses, more inspectors and more clerical aid. For these purposes $15,000 is needed for the year. The council has appropriated less than half that amount for the department.

MARYLAND.

Dr. C. Z. Wingard, Funkstown, was struck by a train, near Hagerstown, on February 13, and seriously injured.

Health Reccommendations.—City Health Officer O. W. Ragan, M.D., Hagerstown, recommends that the city council prohibit spitting on the sidewalks, in public conveyances and buildings; the keeping of hogs in the city from May 1 to October 1; the use of slaughter-houses from May 1 to October 1, and the rendering of tallow for the same period, except by improved machinery sanctioned by the sanitary board.

Baltimore.

Dr. Edwin F. Moriarty has been appointed assistant resident physician at the Baltimore University Hospital, vice Dr. Wm. F. Stover, resigned.

The total deaths for the week ended February 16 were 242, pneumonia reaching the unprecedented number of 59. There were also 31 deaths from other diseases of the respiratory system.

Dr. John M. T. Finney was elected president of the Princeton Alumni Association of Baltimore for the ensuing year. President Patton advocated a preparatory medical school at Princeton.

The health department is enforcing a rule that all children recovering from diphtheria, scarlet fever or measles show a certificate from the department before they are allowed to return to school.

The death-rate has been alarming of late, that for the week ended February 2 being greater than any in the last five years. No less than 62 deaths from pneumonia were reported. Consumption caused 36, influenza 10, and the total mortality was 262.

Rohe Memorial.—A Rohé memorial meeting was held by the Medical Society of the College of Physicians and Surgeons, on February 6. A beautiful tribute to Dr. Rohé as man and friend was read by his colleague, Prof. Wm. Simon, and personal reminiscences were given of the deceased physician and alienist by Drs. A. Friedenwald, J. Chambers, T. A. Ashby, and others.

MASSACHUSETTS.

The Board of Health of Fall River has elected Dr. Albert C. Dedrick, chairman, and Dr. Louis V. Cabana, agent.

Dr. Thomas J. Dion has been reappointed a member of the Quincy Board of Health, and Dr. Charles W. Garey has resigned.

Dr. W. J. Campbell has been elected house physician of the Worcester City Hospital, and Dr. Albert Wood, vice-president of the board of trustees.

A petition has been received in the house of representatives to the effect that any person not registered as a physician or surgeon who advertises as a healer of disease shall be punished by a fine of not less than $100 or more than $500 for each offense.

MICHIGAN.

Dr. Frank W. Martin, Portland, was elected state physician of the Modern Woodmen of America, February 14.

Dr. Albert B. Simonson, Calumet, has succeeded Dr. Emmet H. Pomeroy as chief of the medical staff of the Calumet and Hecla Company.

A Dowie Disciple in Kalamazoo, whose children have not been allowed to return to school because they had not been vaccinated, threatens to test the state health laws, and to have a bill introduced in the legislature making vaccination of school children optional with parents.

MISSOURI.

Dr. James W. Smith, Pleasant Hill, has been appointed president of the board of managers of the State Hospital for the Insane, at Fulton.

Lewis County has accepted the new law providing for county boards of health and has named Dr. W. B. Simpson, La Belle, as its medical adviser.

The Stylus has been purchased by, and will be consolidated with, the *Interstate Medical Journal*, and the two publications continued under the latter name. Dr. William Porter, editor of *The Stylus*, will be associated with Drs. W. B. Outten, R. B. H. Gradwohl and O. F. Ball, in the editorial management.

MONTANA.

Northern Pacific R. R. employees have received notification from headquarters at St. Paul to immediately report to their own or the company physician and be vaccinated unless they have been vaccinated within the last four years.

NEBRASKA.

Dr. Ruth M. Wood, Lincoln, has been appointed physician to the Girls' Industrial Home, Milford.

Dr. Hallie D. Ewing, Hastings, has been re-appointed second assistant physician at the Asylum for the Chronic Insane, at that place.

A hospital-corps school for the instruction of privates of the hospital corps of the army, in the duties of their position, is to be established at Fort Crook.

NEW YORK.

The senate has passed the bill abolishing the present State Board of Health, and establishing a single-headed commission.

The Niagara County Medical Society held a special meeting at Lockport, February 9, and adopted resolutions in memory of its lately deceased member, Dr. Henry C. Hill, of Lockport.

Professional Confidence.—A bill has been introduced into the legislature to include nurses within the scope of Sections 834 and 836 of the Code of Civil Procedure, so as to place on them the same restrictions as on physicians, regarding revealing information obtained from patients while serving in a confidential and professional capacity.

New York City.

Dr. Alfred E. Meyer, while at El Paso, Texas, on his way to California, in the capacity of medical adviser and friend of a wealthy banker and his wife, was drugged, assaulted and robbed.

A bust of Dr. Horace Green, a pioneer in the medical profession of the city, was presented to the New York Academy of Medicine, February 7, Dr. D. B. St. John Roosa making the presentation address.

The Platt Pavilion, an addition to the New York Eye and Ear Infirmary, erected to the memory of James N. Platt, through the generosity of the family of the late Justin A. Bliss, will be opened to the public in a few days. It is a fireproof edifice and contains isolated wards for the treatment of contagious ophthalmia.

New Hospital Site.—The New York Red Cross Hospital and Training School has just closed negotiations for a new site for the hospital on Central Park West, near One Hundredth street. The plot measures 99 by 100 feet, and cost $100,000. The plans contemplate the erection of a hospital with accommodations for 100 patients and a nurses' home for about twenty nurses.

Bellevue Hospital.—In the face of the recent presentment of the grand jury, and the demonstration that Bellevue Hospital is maintained at a much lower per-capita rate than other institutions of its kind, the present city administration flatly refuses to give another dollar toward carrying out the much-needed work of reform. Six new nurses, men of middle age, who have had experience in the care of the insane, have been appointed to duty in the insane pavilion, and are said to be receiving $30 each per week.

OHIO.

Dr. Edward C. Brush, Zanesville, has been appointed local surgeon of the Wheeling & Lake Erie R.R.

Dr. F. W. Smedley, who resigned as health officer of Cleves in January last, has been re-elected to that position.

The City Council of Akron has donated $5,000 to aid in ridding the city hospital of its indebtedness of $15,000. When this has been accomplished, a contingent donation of $100,000 will be made by O. C. Barber.

Cincinnati.

To Hold Murderers.—Dr. Harmon, of Longview Asylum, and Prosecutor Hoffheimer, have arranged that all patients at Longview, who are sent to the hospital after being charged with murder, will not be dismissed until the prosecutor has received proper notification.

Divine Healer Bound Over.—Squire Winkler, February 18, refused to dismiss the cases of Frank Brokamp and Mrs. "Dr." Yaeger, charged with practicing medicine without a license. He held that the alleged divine healers do not, according to the plea of their attorney, come under the provisions of the statute relating to osteopaths. He said that, at any rate, osteopaths must be registered, and the defendants had not been. He bound Brokamp over to the grand jury under a $500 bond, and continued "Dr." Yaeger's case for a week. On cross-examination Brokamp was asked by the attorney for the State Medical Board what he knew about anatomy. The healer looked puzzled and asked the judge what the word anatomy meant. His own attorney attempted to excuse his client on the ground that he was a German and did not understand certain words in the English language. He was then asked how he could diagnose a patient's illness if he could not tell the symptoms of disease. The answer was that the same treatment applied to everything from toothache to heart disease. When asked what the treatment consisted of, the defendant refused to answer, stating that that would be revealing professional secrets, and that every physician *in town could cure every ill, if he knew his (the healer's)* secrets. *On* cross examination he admitted that while not healing he acted as gardner to the *metaphysical institute.*

PENNSYLVANIA.

Dr. Morris H. Koch, Kutztown, *fractured both arms in a* runaway accident, January 30.

Dr. Harry M. Acheson was re-elected president of the board of Health of Washington, on February 7.

Changes in Hospital Staff.—The *death of Dr. Schneider* has necessitated several changes in the staff of the Williamsport Hospital. Dr. Thomas C. Rich has been elected secretary of the board of managers; Dr. William E. Glosser has been placed on the medical staff, and Dr. John A. Klump made abdominal surgeon.

Philadelphia.

The Wills Eye Hospital has added to its surgical staff Drs. John William Pancoast and William L. Zuill.

Dr. Irvin E. Bennett, of this city, now on duty with the United States forces *in Pekin, has been made a major and* surgeon of volunteers.

***The Mutual Aid* Association** of the Philadelphia County Medical Society has received a legacy of $8,110.55 from the *late Dr. Albert Fricke.*

The Philadelphia Neurological Society, at the close of its *February* 25 meeting, will tender a reception to Drs. George L. Walton and Walter E. Paul, of Boston, who present a paper on "Astereognosis," before the Society.

The Stille Medical Society, University of Pennsylvania, gave a dinner February 15, in honor of Dr. Richard C. Cabot, of Boston. The following responded to toasts: Drs. John H. Musser, George E. DeSchweinitz and J. H. Penniman.

Appropriations.—The Wills Eye Hospital *has made a* request of the legislature for the following *appropriations: For the completion* of the contagious ward, $25,000; for its *equipment, $10,000*, and for its maintenance for two years, $40,000.

The Philadelphia County Medical Society, at its meeting on February 13, adopted a resolution *opposing the antivaccination* bill now before the state legislature. The society *in this* way endorses the compulsory vaccination law now in vogue in this state.

Dr. Keen's Holiday.—Dr. William W. Keen has asked for a leave of absence from Jefferson Medical College, *for a year,* that he may take a long-needed vacation and rest. He *intends* to go to St. Paul for the meeting of THE AMERICAN MEDICAL ASSOCIATION, and then spend a *year in a leisurely trip around* the world, returning to Philadelphia *to resume his practice* and college work in September, 1902. The rumors that Dr. Keen intends to retire from practice and teaching, he authorizes us to say are without foundation.

TEXAS.

A monument to the late Dr. Francis M. Logsdon, of Beeville, *erected by the* Woodmen *of* the World, was unveiled, February 1.

Dr. John Cunningham, Ravenna, was elected February 10 to fill the unexpired term, in the house of representatives, of W. W. Riddling, deceased.

Waco physicians favor the creation of a state board of health, and have petitioned the *legislature to better the* health and quarantine laws of the state.

WASHINGTON.

Dr. William C. Gibson has been chosen president of the Seattle Board of Health for the *ensuing* year.

Dr. Walter F. Morrison, Spokane, *has been* appointed physician of Spokane county, vice Dr. Benjamin R. Freeman, term expired.

Seattle's mortality *for 1900* is said to have been at the rate of 8.69 per 1000 per annum. The *total deaths* for the year were 783.

Dr. N. Fred Essig, Spokane, has been appointed surgeon for the Kalispell and Cascade divisions of the Great Northern Railway, to succeed Dr. Donald G. Russell.

CANADA.

Dr. H. G. Barrie, Toronto, who was in South Africa as the Y. M. C. A. representative, will shortly leave for Shanghai, to do mission work for that organization.

Smallpox in Northern Ontario.—The Provincial *Board* of Health of Ontario recently held a meeting to consider the outbreak of smallpox *along* the Canadian Pacific Railway in the northern section of the province, at Sudbury and elsewhere. The disease has appeared in several places, all the way from the "Soo" to Ottawa; and Dr. C. A. Hodgetts, of Toronto, has been sent to Sudbury, where he has discovered ten cases.

Diplomas in Legal Medicine.—The *corporation* of McGill University met last week and the proposal of the medical faculty to grant diplomas in legal medicine was approved. The diploma will be awarded after a special post-graduate course under certain specified conditions, yet to be made public. The matriculation standard of the medical faculty was also discussed, *and it is proposed* to raise the standard and make it equivalent to that set by the highest requirements of any prov*ince in the Dominion.*

The Tuberculin Test.—While the medical men were holding their conference *for* the purpose of limiting the ravages of tuberculosis in Canada, the cattle men were *holding* a convention in the same city for the purpose of getting rid *of* the tuberculin test. In Canada the law requires that a strict test *by tuberculin* be made *on all* imported cattle while in quarantine. As a result of this conference with the *minister* of agriculture, it was agreed that the regulations should be somewhat modified. Toward this end legislation will be introduced during the present session of parliament, abolishing the law which now prohibits selling the hides of tuberculous stock, as scientists agree that there is not the slightest *danger* from selling these. The minister was *opposed to the abolition* of the tuberculin test, but some changes may be made regarding the employment of the test in thoroughbred cattle imported for breeding purposes.

Ontario Asylums Report.—The annual report of the asylums for the lunatics and idiots of the *province gives* the asylum population of Ontario as 5512, with an average of 5137 in daily residence. In 1900, the expenditure for the mainten*ance in the province* was $634,977.42, the per capita cost being $126.26. During the year 1900, 254 patients recovered, an increase of seven *over* the previous year, and 311 were discharged on probation, the average for the previous ten years being 255. The number of deaths was 269, a decrease of 23, as compared *with 1899.* Seventy-six per cent. of the population was employed, the *percentage* for the previous ten years being 75. The revenue from paying patients totaled $78,450.70, *nearly $4500 above the average. Dr. Daniel Clarke,* superintendent *of the Toronto Asylum,* contributed to the report a paper in *which he* combats the theory that insanity is purely a mental disease. *He contends that* it is always a bodily disease, and that mental or moral perturbations are occasions; not causes, *of brain disease.*

Health on the Yukon.—On the 15th *of January* the thermometer registered 68.5 degrees below zero: *and* the average minimum temperature for nine days was 60 *below.* Accom*panying this intense* cold in the Yukon valley was *the regular,* peculiar white mist, so dense that nothing could be seen *more than fifty* yards away. An epidemic of dog madness prevailed throughout Dawson for some days in January. As to the cause of this, Dr. McArthur, the medical health *officer,* is of the opinion that it is genuine rabies, which became prevalent by contagion. It is expected that it will take *some months* for the disease to become extinct. *All the dogs* have been impounded and so far no person has *been bitten.* Typhoid and pneumonia have been very *prevalent during* the past two months, the latter being of a very severe, acute type. "Typhopneumonia" has proved *very fatal.* It is stated that the pneumonia appears first *and* that at the time of the crisis, abdominal troubles with other marked symptoms of typhoid appear, resulting in a fatal *collapse. During the* past two months the death-rate has been very high. *Several well-known* citizens have succumbed to this fatal complication.

Conference on Tuberculosis.—*In* response to a general call by Lord Minto, the governor-general of Canada, there gathered at Ottawa, on the *14th inst.,* a large number of the prominent medical men of the Dominion as well as many private citizens. Every province of the *Dominion* was represented.

The object of the Conference was to place the Canadian Association for the Prevention of Tuberculosis, which was organized at the last meeting of the Canadian Medical Associaton, at Ottawa, on a permanent and established basis. Sir William Hingston, Professor Adami, Sir James Grant and Dr. Roddick took a prominent part in the proceedings. Professor Adami proposed that the Dominion government should have all immigrants examined for the purpose of curtailing the disease in that quarter. Dr. Chown, of Winnipeg, declared that the air of Winnipeg and Manitoba was free from the germs of tuberculosis. Dr. Lafferty, of Calgary, wants the government to erect sanitaria in the northwest, as that district is simply overrun with the tuberculous, fast becoming a menace to the residents. The associaton was organized with the Earl of Minto as honorary president and Sir James Grant as president. The association will petition the dominion parliament, now in session, to grant aid for the building of sanitaria and also to establish a department of public health.

FOREIGN.

The death of Dr. Leslie Ogilvie, physician to the Children's Hospital, Paddington Green, London, is announced.

A bounty on rats is being paid by the Stockholm authorities, as a precaution against bubonic plague.

The Congres de Gynecologie, of France, will meet this year at Nantes, September 23 to 30. Foreign gynecologists are invited to attend.

The Massage Institute connected with the Berlin University has opened a polyclinic for massage treatment of various affections, for patients of all aged.

The Leipsic dermatological clinic has been enlarged and remodelled on the latest ideals, with rooms for Finsen's light treatment, facilities for photographing, etc.

The University of Athens celebrated, December 30, the twenty-fifth anniversary of the professional career of the incumbent of the chair of surgery, Dr. S. Manghinas.

Medallion for Lannelongue.—The friends of Professor Lannelongue of Paris are to present him with a portrait medallion as a souvenir of his services as president of the International Medical Congress last August. It is to be the work of Chaplain, and every one who subscribes twenty francs will receive a bronze copy. The address of the committee having the matter in charge is: 15 rue Soufflot, Paris; Ch. Delagrave, treasurer.

Smallpox Epidemic in Glasgow.—No sooner has Glasgow freed itself from plague than it has been visited by an epidemic of smallpox. On January 25 there were 324 cases in hospital, an increase of 203 on the number a week before. Eleven deaths have occurred. The authorities are actually encouraging revaccination, and in the east end of the town the vaccination stations are often quite thronged. All "contacts" are vigorously followed up and isolated. The accommodation at the fever hospital is being largely increased in case of emergency by the erection of huts.

Plague in India.—According to the *British Medical Journal* of February 9, the number of deaths from plague in the city of Bombay, for January 9, 10, 11, 12, 13, 14 and 15 were 40, 45, 63, 45, 35, 43, and 51 respectively, or 324, as compared with 222 during the preceding week. In the corresponding week of last year, the deaths from this disease numbered 428. The plague is found in nearly every district of the city. In Calcutta 50 to 60 cases occur weekly. The government of Madras has granted 150,000 rupees toward the expense of preventing plague. During the week ending January 15, in Mysore Province, the cases of plague numbered 419, a marked increase over preceding records. The mortality in Bombay City is now sufficient to justify the present being called the fifth epidemic of the disease since 1896.

Plague Infected Ship at Bristol, England.—On January 20 a steamer arrived at Bristol, from Smyrna, Asiar Minor, with a cargo of grain. No cases of illness had occurred, but it was reported that six dead rats had been found in the grain and burned. Another was found and examined bacteriologically, with the result that bacilli were found. Still another rat was sent to Dr. Klein, who found by inoculations that the disease of which the rats had died was plague. By this time most of the cargo had been discharged. Every precaution was then taken. The ship was kept in the floating harbor and every portion thoroughly disinfected. Every one of the seventy-seven laborers employed in removing the cargo has been kept under observation and visited daily. So far no case of illness has occurred.

LONDON.

Outbreak of Plague on a Steamer at Hull.

The disappearance of the Glasgow outbreak of plague has been followed by other attempts of the disease to obtain a footing in this country, but so far unsuccessful. A steamer arrived at Hull on January 10, as previously noted in The Journal, from Alexandria, with the body of one of the crew who had died on the voyage. The body was removed to the city mortuary and buried on January 13, no suspicions being aroused. On January 12, however, two of the crew were taken ill. The medical officer of health and another doctor, who saw them on the following day, diagnosed influenza complicated by pneumonia. The patients died on January 15 and 16, respectively. Bacteriologic examination showed that they had suffered from pneumonic plague. Meanwhile two firemen had become ill, on January 14, and were removed to the hospital, and four other members of the crew were removed for isolation. Work was suspended on the vessel and it was removed to a mooring station and thoroughly disinfected. Seven more of the crew were removed to the hospital for isolation. One of the isolated men became ill and died on January 22. On January 21 the watchman of the ship, who had rendered assistance to the sick members of the crew, was taken ill and removed to the hospital. He died on January 27. The doctor who had seen the sick crew and who had assisted at the necropsies became ill on January 18 and was removed to the hospital on January 24. Bacteriologic examination of his sputum showed that he was suffering from pneumonic plague. His condition was critical for some days, but he is now recovering. In no case were enlarged glands detected; all were of the pneumonic form of plague. Altogether seven deaths have taken place, and the bodies have been cremated. The nurses and all others who have been exposed to infection have been treated with Haffkine's prophylactic serum. The names and addresses of all persons who have been in contact with or in any way associated with the vessel have been taken and their homes visited daily. Apparently all danger of the disease spreading has passed.

Intraperitoneal Rupture of Ovarian Cysts.

At the Edinburgh Obstetrical Society, Dr. Haultain recently read a paper on this subject, with special reference to operative treatment. He remarked that in the majority of cases rupture was apparently unassociated with discomfort, and therefore only in those cases in which the cyst was of sufficient size to have attracted attention could a diagnosis be made. The absence of symptoms was doubtless due to the innocuous contents of the cyst and their slow escape. In the greater proportion of the recorded cases severe and dangerous symptoms supervened. Palm, in his collected statistics of 25 cases, recorded 18 deaths: 3 from collapse, 6 from acute peritonitis, 3 from chronic peritonitis, and 6 from protracted fever. Nephen found that 65 out of 155 cases terminated fatally. In these instances the contents of the cysts must have been intensely irritating, and in many septic; in some death resulted from hemorrhage. The causes of rupture were numerous—violence, morbid processes in the cyst wall, in some cases from torsion of the pedicle, and intracystic hemorrhage. Gelatinous contents were slowly absorbed by the peritoneum, and might continue to distend the abdomen. More fluid contents—especially those of cysts of the broad ligament—are absorbed and the cyst may become permanently obliterated. In other cases the tumor redistends or secondary cysts take on active growth. The contents might be so irritative as to cause peritonitis and adhesions so widespread as to be an insuperable barrier to removal. The treatment of ruptured cysts consists in removal of the cysts as soon as possible. In a certain proportion of cases spontaneous cure occurs, but as delay might allow widespread adhesions to form, early operation is advisable. In operating, the surgeon is liable to be misled by the gush of fluid when he opens the peritoneum and to think that he has entered the cyst. An attempt would then be made to separate the cyst wall from suspected adhesions to the abdominal parietes, resulting in stripping off the parietal peritoneum. In these cases it is well to enlarge the opening and to introduce the hand into the cavity before attempting the separation of the cyst wall.

Oophorectomy for Recurrent Mammary Cancer.

At the Clinical Society, Mr. Stanley Boyd recently showed a woman, aged 31, on whom he had performed this operation. In 1898 the left breast was removed for carcinoma. In 1900 operation for recurrence was contemplated and abandoned. In August, 1900, the patient was emaciated; there were recurrence in the scar, two outlying subcutaneous nodules, considerable enlargement of the left supraclavicular and substernomastoid glands, which were rather fixed, and many large hard glands in the right axilla and a few in the neck. The left vocal cord was paralyzed and the patient had great difficulty in swallowing fluids. Double oöphorectomy was performed. Improvement took place rapidly from the day of the operation. On September 8 the nodules and glands, except one beneath the sternomastoid, had disappeared. On December 4 the voice and power of swallowing were normal and the patient had gained 21 pounds in weight.

Treatment of Rodent Ulcer by the X-Rays.

At the Hunterian Society, Dr. Sequeira showed three patients who had suffered from rodent ulcer of the face, for thirteen, eight and seven years, respectively. They were treated for ten minutes a day with the *x*-rays. The current employed was from 3 to 4 amperes, with a ten-inch spark. The lamp was placed six inches from the affected part, the normal skin being protected with lead foil. The ulcers healed entirely, and finally the raised growing edge also disappeared. Dr. Sequeira strongly recommends this treatment in all cases of rodent ulcer in which complete removal with the knife is impossible. It is too early to say anything of recurrence, but even if the treatment has to be repeated the patients are much better off than with progressive ulceration. Dr. Sequeira believes that so short an exposure as he has given, limited to the growth itself, is not likely to cause the serious sloughing which occasionally follows prolonged exposures. These results are interesting in connection with the equally successful results obtained from the *x*-ray by Drs. Knox and Pusey in lupus (THE JOURNAL, Nov. 10, 1900, p. 1211; Dec. 8, 1900, p. 1476).

Chronic Interstitial Nephritis in a Girl Aged Seven.

At the Society for the Study of Disease in Children, Dr. Guthrie related this case. A thin, stunted child with marked bronzing of the skin was admitted to the hospital January 6, on account of severe headaches, accompanied by vomiting, amaurosis and vertigo, which had occurred every day for two months. She never had scarlatina nor dropsy. The left ventricle was hypertrophied, the pulse of extremely high tension and the radial and brachial arteries were thickened. The urine amounted to from two to three pints daily and gave a specific gravity of 1006 to 1010. It contained albumin one-twelfth to one-half, and a few granular and hyaline casts. After admission the symptoms continued. She wasted rapidly and the heart enlarged. On the 17th she had two fits with loss of consciousness, rigidity and convulsions almost confined to the right side. On the 30th she had three more fits. During the eclamptic period the urine was fourteen to eighteen ounces, but in the intervals it rose to 106 ounces a day. On February 4 she became strange in manner. She gradually became comatose and died on the 7th. She was never dropsical. At the necropsy the heart was found hypertrophied and dilated. There were two large hemorrhages in the right cerebral hemisphere. The arteries generally were thickened and the kidneys showed marked interstitial nephritis.

Interstitial nephritis is very rare in children. Dr. Guthrie found records of eight similar cases between the ages of 5 and 14. The symptoms were precisely similar to those in adults.

Correspondence.

Diagnosis of Rabies.

PHILADELPHIA, Feb. 11, 1901.

To the Editor:—In THE JOURNAL for February 9, page 401, you give a report of the meeting of the Philadelphia Pathological Society for January 10, which includes a summary of the paper on "The Rapid Diagnosis of Rabies," by ourselves, and in your "Current Literature" you refer to this in place of an abstract of the paper. The report sent to you is so hopelessly muddled and inaccurate that we must beg space to correct it. Your correspondent has failed not only to give the facts as we presented them, but also to grasp the primary object of our work, which was an examination of the claims made by Van Gehuchten and Nélis as to the changes which occur in the intervertebral and plexiform ganglia in cases of rabies, and a comparison of their findings with those of Babès in the medulla oblongata, to which he has given the name "rabic tubercle." The method given by your correspondent as that followed by us is a hopeless jumble of two that were described. We did not use "Weigert's methylene blue" on any occasion, not knowing the preparation. We stained our sections according to Nissl's method, and with hematoxylin and eosin, the latter of which we found preferable for general use. We have examined the ganglia in twenty-eight cases of rabies, and in all of them found the lesions described by Van Gehuchten and Nélis, and believed by them to be the specific lesion of the disease. In twenty-one of these we examined also the medulla after the method of Babès, and in ten found the "rabic tubercle" described by him. We conclude, therefore, that while the method of Babès may give great assistance in some cases where the ganglia are not obtainable, for general use the procedure of Van Gehuchten and Nélis is preferable and more reliable, the changes described by them having a positive diagnostic value.

In the postmortem diagnosis of the case of the child detailed, cultures were made from the rabbits which succumbed to inoculation, carried through four generations, for the purpose of excluding accidental infections. The sterility of our cultures enabled us to say with absolute certainty that the animals did not die of any known bacterial disease. As the micro-organism of rabies has not yet been discovered and never cultivated, the results obtained are regarded as strong evidence that the cause of death was rabies. It was this conclusion we drew from our failure to obtain growths in our culture-tubes, not "that the micro-organism of this disease is different from that of any other type." Very sincerely,

MAZYCK P. RAVENEL, M.D.
L. J. MCCARTHY, M.D.

Result of Governor's Insults to Medical Profession.

DENVER, COLO, Jan. 31, 1901.

To the Editor:—THE JOURNAL has shown such an intelligent appreciation of the character and official acts of Charles S. Thomas, late governor of Colorado, that I feel sure you will record with some degree of satisfaction a few facts in connection with his recent failure to secure election to the United States Senate.

As long ago as last summer the medical profession of Colorado was actively awake to its duty in connection with Mr. Thomas's senatorial candidacy, and without regard to party affiliation, practically every regular physician in the state took an interest in this aspect of our political campaign. Early recognizing the probability of democratic control of the general assembly, physicians made it their business to work at primaries and in conventions for the nomination only of such democratic or "fusion" legislative candidates as would promise to oppose the ambitions of Governor Thomas. When we consider that the governor at that time was the supreme head of about as perfect a political machine as this state has ever known, the difficulties of our task may be imagined.

But the election occurred. The fusionist or democratic control of the general assembly was even by a greater majority than they themselves had anticipated. The governor felt perfectly secure of the senatorial nomination from the "fusion" caucus. There never was a time at which he claimed less than within four votes of enough to nominate. Those four votes it was an impossibility for him to secure. No arguments, no political influence, no improper proposals could induce even so small a number of the opposition to come to his support. The members who had pledged themselves to the doctors of their various districts stood by their pledges and the ambition of Governor Thomas's life ended in a tearful withdrawal of his name.

The medical profession of Colorado congratulates itself that the gratuitous and malevolent insults heaped upon it two years ago in the remarkable veto message of the governor, have been resented in the only manner that he—as a politician—could appreciate. When scheming politicians realize that physicians propose to assert their rights and privileges as citizens in an effective manner, we may be treated with more courtesy as an organized profession. Very respectfully,

WILLIAM P. MUNN,
President Colorado State Medical Society.

[The above shows what physicians can do if they work together.—ED.]

Deaths and Obituaries.

Samuel C. Busey, M.D., University of Pennsylvania, 1848, died at his home in Washington, D. C., February 12, aged 71. He was born in Maryland and began his medical studies with Dr. Hezekiah Magruder in Georgetown. After his graduation, he returned to Washington, where he engaged in active practice. He worked his way to the front at once. He served the Medical Society of the District of Columbia six times as its president, was professor of materia medica and diseases of children in Georgetown Medical School, and was one of the founders of the Children's and Garfield hospitals. He was a member of THE AMERICAN MEDICAL ASSOCIATION, took especial interest in municipal sanitation and his researches on this subject were painstaking and his findings valuable. On the fiftieth anniversary of his graduation in medicine, Dr. Busey was tendered a banquet by the local profession. Several years ago he fractured his thigh by a fall down an elevator shaft and never regained strength. During the last three years he has devoted his attention to literature and especially that relating to the history of the District of Columbia.

Fred J. Hodges, M.D., Chicago Medical College, 1888, died February 18, at the age of 36. After his graduation he practiced medicine a few years in Chicago, later in Anderson, Ind., and for the last few years had been associated with his brother-in-law, Dr. Rinehart, at Ashland, Wis. Six weeks ago, in performing an operation, Dr. Hodges was poisoned through an abrasion on his hands.

Gustavus Scott Franklin, M.D., College of Physicians and Surgeons, New York, 1862, at one time a member of the Ohio State Medical Society and of THE AMERICAN MEDICAL ASSOCIATION, died at his home in Chillicothe, Ohio. The Ross County Medical Society, of which he was one of the founders, passed resolutions of regret and sympathy at a special meeting held February 8.

Curtiss H. Osborne, M.D., Yale University, New Haven, Conn., 1877, a member of THE AMERICAN MEDICAL ASSOCIATION, died at his home in Pasadena, Cal. The Pasadena Medical Society attended the funeral in a body, and passed resolutions expressive of regret and sympathy.

Julius A. Mayes, M.D., Medical College of the State of South Carolina, Charleston, 1844, an expert botanist, and at one time president of the State Medical Association, died at his home in Mayesville, S.C., February 9, after a short illness, aged 78.

Edwin S. Miller, M.D., University of Pennsylvania, Philadelphia, 1878, a prominent physician of Altoona, Pa., and a member of THE AMERICAN MEDICAL ASSOCIATION, died from paralysis, at his home in Altoona, February 10, aged 45.

Augusta A. Steadman, M.D., Woman's Medical College, New York, 1881, formerly a practitioner in Taunton, Mass., but for the last ten years a resident of Amsterdam, N. Y., died at her home in that city, February 1, from pneumonia, aged 50.

Aaron T. Shallenberger, M.D., Jefferson Medical College, Philadelphia, 1846, who had practiced in the Beaver Valley for more than fifty years, died February 6, at his home in Rochester, Pa., after an illness for five weeks, aged 75.

Julian N. Parker, M.D., Yale University, New Haven, Conn., 1867, who had practiced for more than thirty years in South Manchester, Conn., died at his home in that place after a protracted illness, February 7, aged 58.

Charles H. Poucher, M.D., Medical College of Indiana, Indianapolis, 1893, formerly superintendent of the Indianapolis *City Hospital, died from the effects of prussic acid poisoning,* at Swanton, Neb., February 11, aged 32.

Peter Moir Barclay, M.D., New York University, 1854, a native of Aberdeen, Scotland, and for nearly half a century a practitioner of medicine in Newburg, N. Y., died February 10, at his home in that city, aged 66.

E. C. Frierson, M.D., College of Physicians and Surgeons, Baltimore, M.D., 1880, accidentally shot himself while cleaning a gun, at his home in Anderson, S. C., February 8; he died almost instantly, aged 40.

Samuel Brown Morrison, M.D., University of Virginia, Charlottesville, 1855, a surgeon in the Confederate service, died at his home, Rockbridge Baths, Va., February 4, from paralysis, aged 72.

Edward F. Davis, M.D., Miami Medical College, Cincinnati, 1872, who practiced for many years at Cleves, Ohio, died after a long period of invalidism at Hamilton, Ohio, February 11, aged 59.

Dana C. Highriter, M.D., College of Physicians and Surgeons, Baltimore, Md., 1887, died from rheumatic fever, after a short illness, at his home in Fulton, N. Y., February 9, aged 35.

Fletcher McFarland, M.D., Rush Medical College, Chicago, 1870, died recently at Jacksonville, Ill., aged 52. He was assistant physician at Oak Lawn until 1882, when he became blind.

William W. Alderson, M.D., College of Physicians and Surgeons, Baltimore, 1894, died from consumption at the home of his parents near Alderson, W. Va., January 24, aged 27.

Daniel Scott Boyle, M.D., University of Maryland, Baltimore, 1860, a surgeon in the Confederate Service during the Civil War, died at Westminster, Md., February 4, aged 67.

Leonard Kelly, Jr., M.D., Medical College of the State of South Carolina, Charleston, 1898, died after a prolonged illness at his home in Olyphant, Pa., February 10, aged 25.

Flavel H. Van Eaton, M.D., Missouri Medical College, St. Louis, 1858, died at his home in Olympia, Wash., February 2, after an illness of two years, from rheumatism.

Lucy M. Gardner, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1896, of Quincy, Ill., died from peritonitis, in La Porte, Texas, February 6, aged 42.

Michael G. Cunningham, M.D., College of Physicians and Surgeons, New York, 1883, died at his home in Binghamton, N. Y., February 11, from la grippe, aged 44.

Charles S. Jenne, M.D., University of Vermont, Burlington, 1887, died at his home in Westford, Vt., February 9, after a week's illness, from pneumonia, aged 35.

James T. Perkins, M.D., University of Maryland, Baltimore, 1877, died at his home in Springfield, Md., after a prolonged illness, February 6, aged 47.

Henry S. Mellinger, M.D., Jefferson Medical College, Philadelphia, 1845, died at his home in Cresswell, Pa., from apoplexy, February 8, aged 79.

Nathaniel B. Boileau, M.D., University of Pennsylvania, 1858, coroner of Hunterdon County, died suddenly at his home in Jutland, N. J., February 11.

William E. Boswell, M.D., Memphis (Tenn.) Medical College, 1873, died from consumption, at his home in Union City, Tenn., February 7.

William H. Edsall, M.D., Albany Medical College, Albany, N. Y., 1877, of Highland Falls, N. Y., died of pneumonia, February 9, aged 49.

Benjamin W. Tingley, M.D., Dartmouth Medical College, Hanover, N. H., died at his home in Bellingham, Mass., February 4, aged 80.

Andrew P. Glanden, M.D., Jefferson Medical College, Philadelphia, 1865, of Newport, N. J., died from paralysis, February 9.

John T. Bingham, M.D., University of Nashville, Tenn., *1860, died suddenly, at his home near Isam, Tenn., February 8.*

John Sistrunk, M.D., New York University, 1858, died at his home near Society Hill, Ala., February 5.

John H. Leary, M.D., Bellevue Medical College, New York, died in Providence, R.I., February 10.

C. L. Brock, M.D., died January 24, at his home in Sheldon, Iowa, aged 83 years.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulæ and outlines of treatment will be answered in these columns.]

Normal Salt Solution in Pleurisy with Effusion.

Dr. John A. Robison states that normal salt solution injected into the pleural cavity after removal of the fluid or when the fluid is loaded with fibrin enhances the tendency to absorption. The points he emphasizes are: 1, it increases osmosis of the fluid into the blood-vessels; 2, it increases the activity of the absorbent lymphatics; 3, it acts as a solvent and an antiseptic; 4, the heat of the injection has a stimulating influence on the pleural vasomotor nerves, dilating the capillaries and hastening the blood current.

Treatment of Severe Cases of Lumbago.

Dr. R. S. Bernice, in *Med. Record*, gives the following treatment of lumbago:

℞.	Ammonii chloridi	gr. xx	1	33
	Ammonii carbonatis	gr. v		30

M. Sig.: At one dose, well diluted in water.

Or,

℞.	Ammonii chloridi	ʒiii	12	
	Liq. hydrarg. perchloridi	℥ss	16	
	Spts. chloroformi	℥ss	16	
	Infusi gentianæ comp. q. s. ad	℥vi	192	

M. Sig.: One tablespoonful in water three times a day.

The dose of ammonium chlorid in either of these prescriptions approaches the maximum dose.

Formaldehyde in Diphtheria.

The following combination containing formaldehyde has been highly recommended in the form of a spray as a disinfectant to the throat in diphtheria:

℞.	Sol. formaldehyde (0.25 per cent.)	℥i	32	
	Potassii chloratis	ʒii	8	
	Acidi borici	ʒi	4	
	Glycerini	℥ss	16	
	Aquæ q. s. ad	℥iv	128	

M. Sig.: Use as a spray to the membrane deposits in the throat.

Taylor, in *Brit. Med. Jour.*, gives the following directions for treatment of diphtheria: A full dose of mild chlorid of mercury; swab the throat with the tincture of iodin; inhale the vapors of the tincture of iodin for five minutes at a time, using the following combination:

Tinct. iodi	ʒi	4	
Aq. destil, q. s. ad	℥iv	128	

M. Sig.: Use as an inhalation by heating over an alcohol lamp and repeat in half an hour if necessary. He recommended also, the administration of quinin, tincture of alcohol when necessary, beef tea and milk.

Treatment of Acute Catarrhal Rhinitis.

Dr. G. C. Stout, in *Ther. Gazette*, states that the treatment should be divided into prophylactic, abortive and curative. Prophylaxis embraces rational clothing, avoidance of draughts, care of the digestive functions and maintaining muscular tone. As a preventive measure a brisk dry massage of the body and limbs morning and evening is excellent. A laxative of mild chlorid of mercury and sodium bicarbonate, followed by strychnin sulphate in one-thirtieth grain doses three times a day, hot drinks at bed-time after a hot foot-bath; then covering up well in bed so as to produce general diaphoresis.

Treatment of a well-pronounced attack consists in giving a saline cathartic, and for the free discharge from the nose:

℞.	Morphinæ sulphatis	gr. 1/32		0020
	Strychninæ sulphatis	gr. 1/95		0007
	Atropinæ sulphatis	gr. 1/150		0004
	Acidi arsenosi	gr. 1/100		0006
	Aconitinæ	gr. 1/1000		00006

M. Sig.: One such tablet two or three times a day according to symptoms. And locally:

℞.	Cocainæ hydrochloratis	gr. x		66
	Acidi borici	gr. iv		25
	Aquæ destil. q. s. ad	℥ii	64	

M. Sig.: *Spray into the nose when the secretion from the nose is excessive and the breathing space narrowed.* After five minutes it is to be followed by a spray of:

℞.	Atropin	gr. x		66
	Aquæ destil. q. s. ad	℥i	32	

M. Sig.: Use as a spray once a day to the nares and allow to remain for five minutes and then gently blow *the nose.*

This should in turn be followed by an oily spray as a protective:

℞.	Menthol	gr. v		32
	Liq. petrolati	℥i	32	

M. Sig.: Spray into the nares once a day.

Pharyngitis or laryngitis, if present will be relieved by the following:

℞.	Olei eucalypti	m. ii		12
	Zinci sulphatis	gr. x		66
	Antipyrini	gr. xl	2	66
	Aquæ destil	℥ii	64	

M. Sig.: Spray into the pharynx and inhale every two or three hours.

Give internally the following tablet:

℞.	Pulv. opii	*gr. ¼ to ½*		015-03
	Camphoræ	gr. i		06
	Ammonii carbonatis	gr. i-iii		06-18

M. Sig.: One such capsule every three hours.

[The following powder may be used to great advantage instead of the spray containing cocain, but should always be prescribed and given out by the physician himself on account of the danger of contracting the cocain habit:

℞.	Cocainæ hydrochloratis	gr. v		32
	Sodii bicarbonatis	gr. iv		25
	Sodii boratis	gr. iv		25
	Iodol	ʒi	4	
	Sacchari lactis q. s. ad	ʒiii	12	

M. Sig.: A small amount to be used as an insufflation into the nares once or twice daily if necessary to relieve the congestion of the swollen turbinated bodies.

The following is very often recommended for cold in the head, although rather *heterogeneous in character:*

℞.	Quininæ hydrobromatis	gr. xx	1	33
	Podophyllin	gr. ii		12
	Aloinæ	gr. ii		12
	Atropinæ sulphatis	gr. 1/25		0025
	Strychninæ sulphatis	gr. 1/6		01
	Sodii bicarbonatis	gr. lxxx	5	33

M. Ft. *cap. No. xx. Sig.: One capsule every two hours.* —ED.]

Treatment of Bronchitis Accompanying Influenza.

Atkinson, in "Amer. Text-book of Ther.," recommends the following if the catarrhal condition is such as to produce paroxysms of coughing:

℞.	Morphinæ sulphatis	gr. ss		03
	Syrupi scillæ	ʒii	8	
	Syrupi lactucarii	℥ss	16	
	Aquæ	ʒvi	24	

M. Sig.: One teaspoonful every three or four hours.

If nausea be present and the cough troublesome, but the bronchitis not severe, the following is advised:

℞.	Morphinæ sulphatis	gr. ss		03
	Acidi hydrocyanici dil.	m. viii		50
	Spts. chloroformi	ʒiss	6	
	Aq. menthæ viridis q. s. ad	℥iss	48	

M. Sig.: One teaspoonful every three or four hours.

If the bronchitis is pronounced, he recommends more stimulating agents and prescribes the following:

℞.	Ammonii chloridi	ʒi	4	
	Mist. glycyrrhizæ comp.	℥vi	192	

M. Sig.: One tablespoonful every three or four hours in water.

Protargol in Acute Gonorrhea.

Belfield, in *Progressive Medicine*, recommends the following in the acute stage:

℞.	Hydrastis muriatis	gr. xv	1	
	Protargol	gr. xv	1	
	Glycerini	ʒiss	6	
	Aquæ destil. q. s. ad	℥iii	96	

M. Sig.: Use as an injection four times a day.

Acute Gout.

He also recommends lithium hippurate in treatment of acute gout, prescribed in the following manner:

℞.	Lithii hippuratis	ʒi	4	
	Syrupi aurantii	℥i	32	
	Aquæ q. s. ad	℥vi	192	

M. Sig.: One tablespoonful in water at bed-time; and as a local analgesic in acute gout he quotes the formula of Sir Dyce Duckworth as a local analgesic:

℞.	Atrophinæ	gr. ii		12
	Morphinæ hydrochloratis	gr. xv	1	
	Acidi oleici	℥i	32	

M. Ft. linimentum. Sig.: To be painted over the painful joint with a large camel's hair brush, and carded cotton to be superimposed, with a towel bandage.

Injections of Iodin Compounds in Syphilis.

Lang, of Vienna, in *Internat. Med. Mag.*, states that in those cases where syphilitics can not tolerate the iodids by the stomach he administers them per rectum, or when conditions are unfavorable for administration in this way, he resorts to subcutaneous injections as follows:

℞.	Potassii iodidi	℥i	32	
	Codeinæ hydrochlor	gr. vii		42
	Aquæ destil	℥i	32	

M. Sig.: Inject from fifteen to forty-five drops daily. The codein renders the injection less painful and does not retard the rapidity of absorption. In other cases he used the following:

℞.	Iodoformi	ʒi	4
	Vaselini (liquid)	ʒiss	6

M. Sig.: Inject seven drops subcutaneously every day, or every other day.

Treatment of Lupus.

Unna, in *Brit. Med. Jour.*, recommends the following paste in treatment of lupus:

℞.	Acidi salicylici		
	Solutionis antimonii chloridi āā	ʒi	4
	Creosoti		
	Ext. cannabis indicæ āā	ʒii	8
	Lanolini	ʒiv	16

M. Sig.: Apply locally to the afflicted part.

The solution of antimony is an unofficial preparation and is a powerful caustic and a destroyer of bacilli. The creosote and cannabis indicæ will relieve the pain. The salicylic acid aids penetration.

Treatment of Sciatica.

Hogge, as noted in the *Internat. Med. Mag.*, states that he has good success in the treatment of sciatica with the following injection in a limited number of cases:

℞.	Salophen	ʒii	8
	Sodii bicarb	ʒi	4
	Aq. destil. q. s. ad	℥ii	64

M. Sig. Inject two drams into the gluteal region every other day.

He states that he kept the patients in bed until the fifteenth injection was given and that all symptoms were relieved after the thirtieth injection.

Treatment of Typhoid Fever.

Dr. William Ewart, in *The Lancet*, recommends very highly the following:

℞.	Sol. hydrarg. chloridi corros. (B.P.)	m. xx	1	33
	Tinct. ferri chloridi	m. xv	1	
	Syrupi aurantii	ʒi	4	
	Aquæ destil	℥i	32	

M. Sig.: At one dose, to be repeated every six hours for ten days.

He claims with this combination to produce a rapid amelioration of the signs and symptoms, such as cleansing of the tongue, clearing of complexion and a return of the appetite, as well as the checking of the diarrhea when present. He claims that the iron acts splendidly as a local application to the ulcers and as a hemostatic, while the mercury exerts its influence upon the hepatic and lymphatic systems, as well as a disinfectant to the alimentary tract.

According to the Brit. Pharmacopeia, the mercuric solution in the above prescription contains 1/16 gr. of corrosive sublimate to each dram. Therefore each twenty minims contains 1/48 of a grain of the mercuric chlorid.

Medicolegal.

Consciousness Presumed.—The Court of Errors and Appeals of New Jersey holds, in the case of State vs. Hill, that the law always presumes a man to be conscious and sane, and if the contrary exists, thereby defeating the natural presumption, it must be shown by the party who alleges it.

Antiseptic Cotton a Medicinal Preparation.—The Board of United States General Appraisers at New York holds that merchandise consisting of a foundation of cotton batting with one surface thereof treated with an antiseptic preparation, the chief component material being cotton, is a medicinal preparation, dutiable as such under the tariff act, and not as a manufacture of cotton.

Right of Recovery for Operation.—It appeared at a trial term of the Supreme Court of New York, Kings County, in the case of MacEvitt vs. Maass, that the plaintiff, a physician and surgeon, was called in by the defendant to treat his wife. He made an examination of her, and informed the defendant that a surgical operation was necessary. They entered into an agreement that the plaintiff should perform it for $75. The trouble was an internal one somewhere in the abdomen. The plaintiff testified that a day or two later he made another examination of the patient and found conditions which were entirely new to him, and foreign to the surgical operation which he had proposed; that the first diagnosis was entirely wrong; that her condition was of much greater gravity than had been supposed from the first diagnosis; that the operation first mentioned was entirely unnecessary; that an entirely different surgical operation, but in the same region, was necessary; that it was one which would jeopardize the patient's life, whereas the first one mentioned would not have done so; and that he substantially informed the defendant of all this. But he did not say that the new operation was worth more or less than the one first proposed, or that he would charge for it more or less than the sum which had been agreed on. In fine, nothing was said by either on the subject of compensation for the new operation. The defendant simply assented to the plaintiff performing it. It was then left to the jury to find what the facts were, and to say whether the agreement for a compensation of $75 was superseded, and they gave the plaintiff a verdict for $225. This meets the approval of the court, which holds that the legal conclusion was that the defendant in assenting to the performance by the plaintiff of the new operation must necessarily have understood that the agreement previously made could not be carried out and was at an end, and that he was to pay for the new services what they should be reasonably worth. If it had turned out on the second examination that the operation first mentioned was not necessary, and that a different and only trifling operation was necessary, and the plaintiff had informed the defendant thereof, the plaintiff could not afterwards have claimed that $75 was agreed upon for that operation, although it was worth only one-third of that amount. The law would be that both parties necessarily understood that the first agreement was no longer in effect, though that was not in so many words said. Moreover, the testimony of the plaintiff and of the surgeons who assisted him in the operation, concerning the ailment of the patient and the particulars of the operation, having been excluded, as privileged, the court holds that their testimony as experts in respect to the value of the plaintiff's services could not be objected to on the ground that, as the nature and particulars of the surgical operation had not been given in evidence, there was no basis for such testimony. There was in evidence that a capital surgical operation was performed, of the time it took, and of the number of visits the plaintiff made to the patient before and after it, and the statute having excluded the particulars as to what the operation really was, the court holds that such evidence of value by the surgeons who saw them, being the best evidence which the nature of the case admitted of, must be held admissible.

May Erect an Individual Home for a Lunatic.—The Court of Appeals of Kentucky gives it sanction, in the case of Cantrill vs. Cecil, to the erection, under certain circumstances, of an individual home for an adjudged lunatic. Here was one who had an estate of $93.000 held in trust for her life by a brother, the principal to be encroached upon in case of imperious necessity only. After having been confined in public and private institutions for the insane, she was removed to the residence of a sister, who, having been advised that it was essential to do so, had erected, with the consent of the committee, but without waiting for that of the chancellor, an addition to her dwelling, at an expense of $6000, so that she could give her a sister's care, and the other could have her own "home," although she had to be confined to her rooms. The sister claimed that this addition added nothing to the value of property, and sought reimbursement therefor. The court holds that she was entitled to maintain a suit for same, but was not entitled to encroach on the principal of the estate, nor, perhaps, on the profits accumulated prior to the expenditure in question. It says that if this arrangement ought to continue as the best possible one under all the circumstances, then the ample income of the estate ought to be made available to pay for the structure which alone made it possible to continue it. Nor does it consider that the expenditure in dispute was an investment in real estate, and therefore in contravention of the terms of the deed of trust. If, in erecting the house for the invalid, there was any permanent improvement of the sister's property, the chancellor might, as matter of common justice and right, it says, charge the sister therewith, and might even provide for the contingency of the patient's immediate or early death, or the event of her ceasing to occupy the house, or of her permanent recovery of mind and health, if it should be supposed the happening of these contingencies might pecuniarily benefit the sister. But, after all, the court asks, why should the unfortunate woman be committed to private or public mad houses because there might result, perchance, some gain to her benefactor or custodian? The supreme consideration was her health, comfort and security.

Use of Boric Acid as Milk Preservative.—Section 4989 and 4990 of the Iowa Code provide that if any person shall sell any adulterated milk he shall be fined, and that the addition of water or any other substance or thing to milk is an adulteration. Construed literally, the trial judge in the case of State vs. Schlenker held that this enactment was unconstitutional; that the evident intent of the legislature was to prohibit sales of anything that would operate as a fraud upon the buyer or prove deleterious to his health, and that, as the defendant was guilty of no fraud and the adulteration was harmless, he had not violated the law, he having put about one-half ounce of boric acid in ten gallons of milk as a preservative, and told a number of customers what he was doing. But with these conclusions the Supreme Court of Iowa does not agree. It holds the statute constitutional and the definition of the term "adulteration" valid and binding. While it may be true, as a general proposition, that the legislature has no power to forbid the sale, without deceit or fraud, of a harmless and wholesome article of food, the supreme court declares that it is also true that in virtue of the police power it may pass such laws as are, or may reasonably appear to be, necessary for the health, comfort, and safety of the people. Almost every police regulation affects, to a greater or less extent, some property right; but these rights are subject to such reasonable limitations in their enjoyment as will prevent them from being injurious, and to such reasonable regulations as the legislature, under the constitution, may deem necessary and expedient. Courts will not interfere, as a rule, unless there is a plain excess or usurpation of power, and in case of doubt it should be solved in favor of the power of the legislature to make the enactment. It may be conceded that the milk sold by the defendant was not harmful to the health of those who used it; but it is certainly dangerous to the public to permit milkmen and those dealing in milk to adulterate it in such manner as to change its constituent properties. So it holds that it was not enough as a defense to show that the defendant did not intend to defraud, or that the milk he sold was wholesome. If that were enough, almost any law intended to protect the public health and safety might be overthrown. It is enough that adulteration such as prescribed by the statute may defraud or prove deleterious to the public health or comfort. The legislature may well determine that the adulteration of milk tends to facilitate vicious practices, and that it ought to be prohibited. Criminal intent not being an essential element of the offense described in the statute, it need not be shown in order to justify a conviction.

Miscellany.

Carcinoma in Sweden.—The official statistics tabulated by Dr. U. Quensel, of Stockholm, show that the mortality from carcinoma has risen from 8 to 9.75 per 10,000 inhabitants during the four-year periods from 1875 to 1879 and 1895 to 1899 respectively. During the first period the women affected outnumbered the men by 192 to 100, and during the second, by 150 to 100. During the first, the carcinoma mortality represented 3.57 per cent. of the total number of deaths, and during the last, 6.27 per cent. The *Semaine Méd.*, in the abstract of his report, calls attention to the fact that the mortality is inversely proportional to the density of the population, being 10.05 per 10,000 in communities of less than 2000 inhabitants: 9.08 in towns of 2000 to 10,000, and only 8.53 in towns of more than 10,000.

Heat in Diagnosing the Presence of Pus.—According to the *British Medical Journal* of January 26, Dr. J. Lewin, of Berlin, has been making experiments which tend to show that the application of heat, while relieving pain resulting from simple acute inflammation, has a decidedly contrary effect when suppuration is present. He is said to have ascertained from the treatment of 10 persons affected with appendicitis, that where hot compresses were applied from one to two hours, 8 were greatly relieved, while the others experienced increased pain. Spontaneous cure resulted in the course of two or three weeks in the 8, but in the other 2, after trying medical treatment without result, operative interference was considered necessary and pus found in both instances. In applying the test it is important to use no other calmative means, and to keep the patient ignorant of the expected results, in order that the effect may not be modified by a dread of operation.

Lay Massage.—The physicians in Belgium are trying to have a clause inserted in the medical practice bill now under discussion, to the effect that massage and medical gymnastics belong exclusively to the domain of medicine and should not be practised by empirical masseurs, with the exception of certain mild affections of the members and the muscles of the back. Masseurs for this purpose should pass an examination before a competent body, and be entitled to a diploma. The *Progrès Méd.* of Paris expresses disapproval of this latter suggestion and urges that massage should be exclusively restricted to physicians. It gives a long list of injuries produced by empirical massage, including the aggravation of contractions, progressive atrophy, laceration of tendons, transformation of a simple arthritis into a hydrarthrosis, etc. The Belgian committee also cites cases of rupture of the tendo Achillis, followed by permanent limping, a thrombosed vein kneaded by a masseur with the death of the subject during the séance, and a suppurative appendicitis perforating into the peritoneum during massage. Zabloudowsky has also published instances of the formation of furuncles and abscesses from lay massage, proving fatal in two cases, displacement of fragments of bones in fractures, transformation of convalescing lesions into subacute, acute and chronic stages, especially in joint affections, production of ankylosis and movable kidney, traumatic inflammation of the sheaths of the muscles and nerves, enlargement of hernia and of the umbilicus, and aggravation of mild forms of hysteria and neurasthenia by the prolonged excitation of the peripheral nerves. One of our Vienna exchanges recently published a case in which a person had undergone a physical examination for some purpose, the kidneys found normal in every respect. A few days later, after some lay massage, the kidney was found transformed into a floating organ. Berlin has now a chair of massage, and special courses in massage at clinics in Heidelberg, Leipsic, Stockholm, Vienna, and elsewhere have long been open to physicians.

Societies.

COMING MEETINGS.

Tri-State Medical Association of the Carolinas and Virginia. Richmond, Va., Feb. 26, 1901.

Medical Society of the Missouri Valley, Omaha, Neb., March 21, 1901.

Portsmouth (N. H.) Medical Society.—This Society, at its annual meeting, February 5, elected Dr. Arthur J. Lance, president; Dr. Benjamin Cheever, secretary, and Dr. Andrew B. Sherburne, treasurer.

International Alcohol Congress.—The eighth international congress against the abuse of alcohol is to assemble at Vienna, April 9. The secretary is Prof. Max Gruber, Schwarzpanier str. 17, Vienna.

Alton (Ill.) Medical Association.—This Society, on February 4, elected Dr. Edward C. Lemen, Upper Alton, president; Dr. Titus P. Yerkes, Upper Alton, vice-president; Dr. Lincoln M. Bowman, Alton, secretary, and Dr. Julius H. Fiegenbaum, Alton, treasurer.

Nineteenth German Congress of Internal Medicine.—Senator will be the president at the congress of internal medicine which will be held at Berlin, April 16 to 19. The chief subjects to be discussed are: "Heart and Vasomotor Remedies," and "Inflammation of the Spinal Cord."

Vigo County (Ind.) Medical Society.—At the annual meeting of this Society, in Terre Haute, Dr. George Schell, Terre Haute, was elected president; Dr. Dupuy, Riley, vice-president; Dr. Malachi R. Combs, Terre Haute, secretary, and Dr. Cassius M. Smick, Terre Haute, treasurer.

Sault Ste. Marie (Mich.) Medical Society.—This Society, with which it is expected that the physicians of the Canadian Soo will affiliate, has been organized with the following officers: Dr. Emil H. Webster, president; Dr. Frederick Townsend, vice-president, and Dr. H. E. McLennan, secretary and treasurer.

Union County (Ill.) Medical Association.—Twenty physicians of Union County met at Anna, January 31, and organized this Society, with Dr. James I. Hale, Anna, as temporary chairman, and Dr. T. Lee Agnew, Anna, temporary secretary. Permanent organization will be effected February 27.

Atlantic County (N. J.) Medical Society.—This Society, at its annual meeting, February 6, elected officers as follows: Dr. Theophilus H. Boysen, Egg Harbor, president; Dr. William Edgar Darnall, Atlantic City, vice-president; Dr. Theodore Senseman, Atlantic City, secretary and treasurer, and Dr. A. Burton Shiner, Atlantic City, reporter.

Denver and Arapahoe Medical Society.—The board of directors of this Society has decided to "vary the monotony" of the meetings by alternating sessions at which papers are read and clinical symposia with presentation of cases and specimens, or more or less social sessions. This plan was adopted three years ago by the Chicago Medical Society, and the results have fully justified the change.

Northeastern Ohio Union Medical Association.—At the one hundred and eighteenth quarterly meeting of this organization, held in Akron, February 12, the following officers were elected: Dr. George L. Starr, Hudson, president; Drs. George S. Peck, Youngstown, and Abner E. Foltz, Akron, vice-presidents; Dr. John H. Seiler, Akron, recording secretary; Dr. Charles W. Milliken, Akron, corresponding secretary, and Dr. Harold H. Jacobs, Akron, treasurer.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting Held January 23.

Dr. George Erety Shoemaker in the chair.

Malignant Endocarditis.

Dr. Albert E. Roussel reported three cases of malignant endocarditis, one following measles, one typhoid fever, and another resembling splenic-lymphatic leukemia terminating in recovery. The first case reported was that of a patient aged 22 years, who had, during youth, suffered from bronchitis. On October 25, symptoms of measles set in, followed later by fevers, sweats and chills. There were vague body pains and loss of flesh and strength. At one time the disease was supposed to be typhoid fever. The temperature was 103, the pulse small, respirations 36. The apex-beat was in the fifth interspace, where a low-pitched murmur was heard. Later the action of the heart became irregular, and a diagnosis of probable endocarditis was made. Death followed. The postmortem showed that there was no hypertrophy; the left auricle was dilated, but with greyish-white vegetations on the valves. The other valves were healthy.

The second case was a patient aged 9 years, who had measles and chicken-pox. He had been examined subsequently by the speaker, but there had been no heart lesions produced by these attacks. Sometime later he passed through a typical attack of typhoid fever, all of the symptoms and clinical signs having been present. On December 1 he had a decided rigor and abdominal pain, and pain referred to the region of the appendix. He suffered from irregular fever for thirty-three days, but at times the temperature became subnormal. The red cells numbered 3,700,000; whites 44,000, and the hemoglobin was 25 per cent. The patient presented a waxy appearance, and the abdomen would pit on pressure. The blood was examined later and showed 3,100,000 reds; 49,000 leucocytes; hemoglobin 25 per cent. The polymorphonuclears were 79 per cent.; mononuclears, 2 per cent.; transitional forms 2 per cent., and eosinophiles 1 per cent. Death followed. The heart was normal in size; the coronary arteries were very firm: the spleen showed infarcts, as did the liver.

The third was a patient who had passed a life insurance examination. The onset was marked by symptoms of rheumatism, with fever and sweats. Slight jaundice subsequently occurred. On May 22, the liver was found enlarged, the apex-beat diffuse. There was a distinct cardiac murmur which was transmitted to the left. The pulse was 116. The red cells numbered 3,000,000; leucocytes, 26,000; and hemoglobin, 35 per cent. The pulse was 148 and irregular.

The speaker stated that in malignant endocarditis streptococci are generally found on the heart valves, though the following have also been found; the bacillus lanceolatus, staphylococcus, pneumococcus, and gonococcus. Some writers believe that the condition is a primary one, while others contend that it is secondary, or is grafted on a previous heart lesion. As a rule the right heart is affected.

Dr. James Tyson stated that he had seen numerous cases of malignant endocarditis accompanied by fever, sweats and chills. He believed that the process was a septic one, and frequently never recognized during life. Pneumonia is probably the most common cause. The right heart is most frequently involved, due to the fact that the valves here receive the blood from the veins. He thought that in the next case he has antistreptococcic serum will be given.

Dr. J. M. Anders expressed his belief that the principal point of interest in regard to these cases, hinges on the diagnosis. The infection is usually a secondary one, though it may occasionally be primary. As to the diagnosis, when we meet cases in which there is a cardiac murmur, colliquative sweats, and a high grade of anemia, we should suspect endocarditis. In former days endocarditis was mistaken for typhoid fever, but the absence of leucocytosis and the Widal reaction would be against typhoid.

Epiplopexy in Liver Cirrhosis.

Dr. J. B. Roberts read a paper on "Epiplopexy in Cirrhosis of the Liver." He has recently done this operation twice, once on a man aged 49 years, whose father had died of cirrhosis of the liver. The patient had manifested symptoms of this disease and an incision was made in the usual manner, the omentum drawn out, the peritoneal surface of the abdominal wall rubber with gauze and the omentum stitched with chromicized catgut. Relief of the ascites followed.

The second patient was a man 64 years of age, whose abdomen had for the past eight months grown considerably larger in size. He had been tapped eight times. There was much jaundice, and some edema of both legs. Tube casts were found in the urine. The operation was done under cocain anesthesia. A small incision was made above the umbilicus, but the omentum could not be found and another incision was made below it. The omentum was then drawn up and spread out, then rolled over slightly so that the stitches would *not pull out*—*which* happened in one case—and then stitched to the abdominal wall.

He believes that the operation should be done as early as possible after the onset of cirrhosis.

Dr. James Tyson had seen this operation prove of great benefit to a case of cirrhosis of the liver. It had cured the ascites.

Dr. Wm. L. Coplin thought that it might be a question whether anything is gained by this operation, since it short-circuits the blood supply of the liver, and if this is done the nutrition of the body might become impaired from loss of these elements.

Dr. Ernest Laplace believes that in cirrhosis of the liver the condition can not be compared to that of a healthy organ. In the former case the liver is incapacitated anyway, and it does its work in a circuitous route. He approves of the operation as done by Dr. Roberts.

CINCINNATI ACADEMY OF MEDICINE.

Regular Meeting, held January 28.

Perichondritis Auriculi.

The president, Dr. C. L. Bonifield, in the chair.

Dr. C. R. Holmes presented a patient with this trouble, involving the right ear. He first mentioned that this affection was an extremely rare one, in fact it was the first true instance of the disease that had thus far come to his notice. The patient was a girl, about 17 years of age, on whom he had operated nine weeks previously—a radical mastoid operation. She had recovered nicely from this operation, and just as he was on the point of sending her home, this inflammation, involving the cartilage of the auricle, had made its appearance. It started first in the concha, and then spread over the entire auricle, seeming to involve as it were a segment at a time. A number of incisions had been necessary and they had invariably been kept open by packing. There would undoubtedly be some deformity of the auricle, but he trusted that by keeping the pus well drained this would not be very extensive.

Seborrheal Eczema.

Dr. E. H. Shields presented a woman who had been shown at a meeting of the Academy several months ago, and in whom at that time he had made a diagnosis of lichen ruber planus. He had had reason subsequently to change this diagnosis to seborrheal eczema. The patient at this presentation seemed to have entirely recovered.

Sarcoma of Testicle and Scrotum.

Dr. J. Ambrose Johnston showed a specimen. The history was as follows: Mr. F., aged 50 years, had noticed a gradual enlargement of his left testicle for about two years, associated with paroxysmal attacks of pain. Recently he had noticed a beginning enlargement on the right side. The shape of the scrotum was, on examination, very similar to that of hydrocele; light, however, was not transmitted. Insertion of a hypodermic syringe drew off a dark, bloody fluid. When the patient came to operation it was found that the skin and tunica vaginalis were about half an inch in thickness, and the testicle was cystic; in size, three inches in one diameter and two in another. An incision was then made over the right testicle and the same condition, only less extensive, having been found, it was decided to remove both and the scrotum as well, the entire mass having an appearance of malignancy. This was done, and the cords ligated with catgut as high up as possible. The patient made an uneventful recovery. Microscopic examination revealed that the sarcomatous infiltration had involved both the tunica vaginalis and the skin in addition to both testicles.

Congenital Abnormality of the Small Intestine.

Dr. J. C. Oliver presented a specimen and report of a case. Soon after the birth of the infant it was given a small dose of castor-oil. This was vomited. No movement of the bowels occurring, the dose was repeated the following morning, and was again rejected. An injection was then given and a piece of black, hard material, coated with mucus, was passed *per anum*. For about forty-eight hours the patient was in charge of a midwife, but no passage from the bowels occurring during this period, Dr. B. P. Goode was called in. Dr. Oliver saw the child about eight hours afterward, with Dr. Goode. It had not nursed for twenty-four hours, and the abdomen was somewhat distended. The nurse in charge insisted that some gas had been passed from the rectum and, relying on this statement, a small quantity of senna and rhubarb was given. Returning the next day, he was informed that every dose of the cathartic had been vomited, and that the vomit had now assumed a fecal character. Examination of the rectum showed that no obstruction existed at this point, so the child was prepared for abdominal section. On opening the abdomen and examining the bowel, a dilated portion of the small intestine ending in a blind pouch was found; beyond this was a layer of tissue resembling the mesentery, but possessing no bloodvessels and about 1¼ inches beyond the termination of the bowel described above was the beginning of another portion of the bowel; this began as a blind pouch and had no communication with the bowel above. As the intestinal caliber was too small to accommodate a Murphy button, end-to-end anastomosis was made. Death followed in about five hours. Postmortem examination showed that the defect existed at the lower end of the ileum, about two inches above the junction with the head of the colon. The small intestine above the obstruction was greatly dilated, while that below, as well as the large intestine, was collapsed and empty. The specimen also showed that in spite of the fact that death had occurred within five hours after section, Nature had rapidly proceeded with healing; the water trial showed that union was firm and that there was no leakage. The remaining portion of the intestinal canal was normal.

Ovarian Cyst with Twisted Pedicle.

Dr. Rufus B. Hall presented specimens of intrapelvic disease with histories, one being an ovarian cyst with acute twisted pedicle, with peritonitis, operation and recovery. The patient, aged 40, having been informed by her family physician that she had a tumor, consulted him about having it removed. She lived a number of miles outside the city, and asked for a few days to complete some family arrangements before coming to the hospital. Up until the time she entered the hospital she was on her feet a great deal, and at the time of her entrance complained greatly of abdominal pain; her pulse and temperature were, however, normal. The operation had been set for the fourth day. During this time she became steadily worse, though her symptoms were not serious until the morning of the day determined on for operation. He had no doubt at that time that the pedicle of the freely movable tumor had become twisted. On opening the abdomen he found a cyst, perfectly black; this tapped, yielded more than a gallon of blood-stained fluid; a portion of the tumor, about as large as a cocoanut, was solid. The pedicle was long, narrow, and twisted three times upon itself; the venous supply was entirely cut off, but not the arterial. The result of this was that many of the veins lining the tumor had become gradually distended until rupture had occurred. There was at least three pints of blood-stained ascitic fluid within the general peritoneal cavity. General peritonitis of high grade was also present. The tumor was removed without difficulty, the abdomen thoroughly drained with normal salt solution, a glass drainage tube inserted—removed in thirty-six hours—and the wound closed. For two days her life was despaired of, but at the end of that time she began to rally and from then her convalescence was uninterrupted. She was discharged well in four weeks.

NEW YORK ACADEMY OF MEDICINE.

January Meeting of the Section on Pediatrics.

Infantile Colic.

Dr. H. Illoway, in a paper on this topic, said that the principal causes of infantile colic are flatulence, influences acting through the mother, indigestion, and refrigeration. Slow or imperfect indigestion will cause flatulence, and constipated mothers are apt to have constipated nurslings. It is generally recognized that indiscretions in the mother's diet often inflict much misery on her nursing infant, but it is less generally understood that salts, senna and similar purgatives, even when taken in such small doses as to fail to exhibit their action in the mother, may cause colic in the nursing infant. Changes in the breast milk, arising from mental worry, sudden emotion or sexual excitement, occasionally affect the infant profoundly, and the possibility of their occurrence should be borne in mind. An obstinate colic has been known to resist all treatment until the mother has been relieved of a toothache from which she has been suffering. The physician will often be misled in his efforts to elicit a history of overfeeding or of too frequent feeding unless he makes pointed and persistent inquiry. Refrigeration is an important causative factor, and generally arises from the infant being allowed to lie in a wet diaper, or in a draught or sit on a cold floor. An important point in the differential diagnosis between simple infantile colic and that dependent on grave pathologic conditions is that in the former the little one kicks and cries and then relaxes into a smile. An excellent means of relieving the colic is irrigation of the lower bowel with hot water, and the external application of heat. Of the many remedies recommended, he has found none superior to freshly prepared milk of asafetida, given in a dose of one-third to one-half teaspoonful, and repeated in fifteen or twenty minutes if required. If given with a little fine sugar, on a spoon, few babies will refuse it. Hiccough is often quickly relieved by putting a few grains of fine sugar into the infant's mouth. The treatment will include the removal of the cause as well as the relief of pain, and one should be slow to resort to opiates in a case of protracted colic.

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117 Removal of Tonsils With Special Reference to the Use of the Farlow Punch. Charles J. Orr.
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119 *A Few Cases of Secretory Neurosis of the Stomach. M. D. Schmalhorst.

American Gynecological and Obstetrical Journal (N.Y.), January.

120 Deep Imprints (Dr. Thomas Addis Emmett). William H. Hingston.
121 *Intrapelvic Operations for Relief of Posterior Uterine Displacements. Walter B. Chase.
122 A Case of Congenital Hypertrophy of the Cervix, Complicated by Prolapsus and Bilateral Pyosalpinx in a Girl 17 Years Old—Vaginal Hysterectomy. Abram Brothers.
123 *Uterine Curettement. Douglas C. Moriarta.
124 A Solid Ovarian Tumor. John G. Earnest.
125 *A Unique Case of Intrapelvic Hemorrhage Due to a Hitherto Undescribed New Growth. W. P. Manton.

Toledo Medical and Surgical Reporter, February.

126 Address Before the Toledo Medical Association. William H. Fisher.
127 Criminal Abortion. W. D. Stewart.
128 Hematology from a Practical Standpoint. Julius H. Jacobson.
129 Heart Failure. William O. Wilson.

AMERICAN.

3. **Cavite Fever.**—Wright describes the form of a disease which seems to be endemic in certain localities of the Philippine Islands, characterized by abrupt onset, high temperature, severe muscular pain, extremely painful and tender eyeballs. The predisposing causes are high temperature, low damp localities, overcrowding, and possibly the nearness to salt water. The exciting cause is supposed to be microbic, though it is as yet unknown. No deaths have occurred and the pathology is obscure, but the author seems to think it due to a toxic peripheral neuritis. The disease is most apt to be confused with dengue, but the absence of an afebrile period and rash enables one to differentiate it from that disease. The absence of catarrhal symptoms separates it from epidemic catarrh. The treatment is rest in bed, with liquid diet, free opening of bowels and cold-tar antipyretics and quinin. In some cases it has been followed by local atrophy and paralysis.

4. **Exophthalmic Goiter.**—Three cases are reported by Abrahams, which seem to point to syphilitic infection as a precedent to Graves' disease. He thinks that the specific affection is not a mere accident or coincidence. The old idea which charges exophthalmic goiter to a disturbance of the cervical sympathetic should receive attention only after syphilis has been excluded, and those cases which yield to mercury or the iodids be looked upon as of syphilitic origin. All the cases where the orthodox remedies fail should be put to the test of specific treatment, and also those characterized by gangrene of the extremities, pigmentation or nocturnal headaches or other suspicious symptoms.

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116 Diagnostic Difficulties in Cystic Myomata of the Uterus, With Report of a Case. Fred J. Taussig.
117 Removal of Tonsils With Special Reference to the Use of the Farlow Punch. Charles J. Orr.
118 Some Remarks on X-Rray Diagnosis. Wm. W. Graves.
119 *A Few Cases of Secretory Neurosis of the Stomach. M. D. Schmalhorst.

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120 Deep Imprints (Dr. Thomas Addis Emmett). William H. Hingston.
121 *Intrapelvic Operations for Relief of Posterior Uterine Displacements. Walter B. Chase.
122 A Case of Congenital Hypertrophy of the Cervix, Complicated by Prolapsus and Bilateral Pyosalpinx in a Girl 17 Years Old—Vaginal Hysterectomy. Abram Brothers.
123 *Uterine Curettement. Douglas C. Moriarta.
124 A Solid Ovarian Tumor. John G. Earnest.
125 *A Unique Case of Intrapelvic Hemorrhage Due to a Hitherto Undescribed New Growth. W. P. Manton.

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126 Address Before the Toledo Medical Association. William H. Fisher.
127 Criminal Abortion. W. D. Stewart.
128 Hematology from a Practical Standpoint. Julius H. Jacobson.
129 Heart Failure. William O. Wilson.

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3. **Cavite Fever.**—Wright describes the form of a disease which seems to be endemic in certain localities of the Philippine Islands, characterized by abrupt onset, high temperature, severe muscular pain, extremely painful and tender eyeballs. The predisposing causes are high temperature, low damp localities, overcrowding, and possibly the nearness to salt water. The exciting cause is supposed to be microbic, though it is as yet unknown. No deaths have occurred and the pathology is obscure, but the author seems to think it due to a toxic peripheral neuritis. The disease is most apt to be confused with dengue, but the absence of an afebrile period and rash enables one to differentiate it from that disease. The absence of catarrhal symptoms separates it from epidemic catarrh. The treatment is rest in bed, with liquid diet, free opening of bowels and cold-tar antipyretics and quinin. In some cases it has been followed by local atrophy and paralysis.

4. **Exophthalmic Goiter.**—Three cases are reported by Abrahams, which seem to point to syphilitic infection as a precedent to Graves' disease. He thinks that the specific affection is not a mere accident or coincidence. The old idea which charges exophthalmic goiter to a disturbance of the cervical sympathetic should receive attention only after syphilis has been excluded, and those cases which yield to mercury or the iodids be looked upon as of syphilitic origin. All the cases where the orthodox remedies fail should be put to the test of specific treatment, and also those characterized by gangrene of the extremities, pigmentation or nocturnal headaches or other suspicious symptoms.

5. **Carbuncle of the Lips.**—Powers calls attention to the danger of inflammatory local disorders in the region of the

lips, and the risk of thrombosis of the facial veins extending to the cerebral sinus and causing facial pyemia. The only remedy in such cases is *prompt excision,* through the mucous surface of the lip, if possible.

8. **Post-Operative Hernia.**—The cure of post-operative hernia is only by operation, and Haynes suggests the following practical directions: 1. Make the incision in each side of the old scars in the healthy skin, though large surfaces must be incised. 2. Look for and recognize the various muscles of the facial planes at a distance from their cicatricial involvement and incise the layer in normal tissue. 3. Divide the peritoneum far enough from the cicatrix so that its normal tissues are easily recognized. 4. Sever adhesions of hernial sac to the viscera or omentum, between ligatures when necessary. 5. The omental stump is to be covered up by rolling into the omentum and keeping it there by running sutures of free catgut. The deeper sutures of the intestines should be covered by bringing the peritoneal coats together, thus preventing subsequent adhesion. 6. Close the wound with chromic catgut after all oozing has been arrested. Unite the peritoneum with a No. 0 chromic gut; the muscular layers by a No. 1, if they are thin and weak, and a No. 2 if thick and strong. The fascial layer is to be closed by a continuous suture or interrupted stitches of No. 1 chromic, and the skin by a No. 0 applied subcutaneously. The wound is to be protected by a light dressing and supported by rubber adhesive bands. Rest in bed for at least three weeks should be observed to give the union sufficient strength. No truss should be used afterward.

9. **Dietetic Management of Typhoid.**—Inglis protests against the use of milk as a diet in typhoid. It is not to be considered as a liquid diet for, after its introduction into the body, it becomes solid and the best kind of culture-medium. The fear of starvation is useless, the ideal diet for typhoid fever is pure water in abundance. This will keep up the excretions by the skin, lungs, kidneys and liver, and the elimination of poisons is a necessity. The bowels then being emptied become open to antiseptic treatment. Later, to satisfy friends and others, he would give such foods as are most easily digestible and absorbed in the stomach, keeping in mind that while the stomach may be acting poorly the intestines are worse. Tender lamb chops and poached eggs are better than milk. He speaks strongly against the use of alcohol as a stimulant; he gives a small drink of good coffee instead, which is more permanent in its effect and may be given with cream and sugar, Sugar, he considers a valuable diet, highly nutritious, while no other hydrocarbon is more promptly and easily absorbed, and the typhoid patient can take it up rapidly.

10. **Sudden Death in Pleurisy.**—Allen reports a case of sudden death in pleurisy and discusses the mechanism of such cases, giving the opinions of authorities. This case, he thinks, can be best explained by assuming that a fleck of fibrin was absorbed from the area of fresh pleurisy in the right lung, carried to the pulmonary vein and lodged there, thus producing a gradual thrombosis causing fatal termination several hours later. This case certainly lends no support to the theory of vascular kinking, since, though the adhesions were very extensive, there was no contraction of the chest and the heart was not displaced.

12. **Digitalis.**—Solomon first describes the constituents of digitalis and their therapeutic standing. As regards the choice of digitalis preparations, he enumerates the various requirements as follows: 1. Should the effect be immediate or slow? 2. Is cardiac action chiefly desired? 3. Is diuretic action wanted? 4. Should the action be both cardiac and diuretic? But one preparation of digitalis fully represents the drug, that is the powdered leaves. In the tincture containing digitalin and digitoxin the action is chiefly cardiac and slightly diuretic; the infusion containing little if any digitalin or digitoxin, but considerable digitonin, as well as some digitalein, is the best diuretic preparation. In prescribing the tincture it is well to remember that the addition of water modifies the virtue of the preparation by precipitating the contained digitoxin. If water is taken with the dose, any precipitate that settles at the bottom should be swallowed. As regards its physiologic action he calls attention to certain fallacies, viz., the estimation of the effects of the drug from experiments on healthy animals as compared to those on diseased individuals. All drugs have more or less specific or selective action in disease, frequently sometimes in different diseases. This has been shown to be so in cases with digitalis. We are taught that this drug is indicated where there is failure of dynamic power of the heart, especially if at the same time the arterial tension is low, but it is surprising, and this point must be emphasized, what benefit follows the administration of the drug in cases where on theoretical grounds it would seem best to avoid it. This is so not infrequently in aortic regurgitation. The nitrites, especially nitroglycerin, often make an admirable addition to the drug in cases where it is apparently contraindicated, and permit it to be used where it would otherwise be impossible. The cumulative action may be entirely avoided by carefully watching the diuresis and by the administration of the drug as longer intervals. Occasionally it is well to skip a day or two. The relative cardiac and diuretic action of the digitalis derivatives is noticed. Digitophyllin has been used to a very limited extent. Its action resembles digitoxin and it may some day come into general use. On the heart and circulation in general the three digitalis glucosids, digitalin, digitalein, and digitoxin, have effects much in common, though there are certain well-defined differences. All three are true heart stimulants, but digitalin is unique in its special influence on the vasomotor center, medulla, and ganglia in the muscular coats of the blood-vessels, contracting them and raising the arterial pressure. It also slows the pulse by directly stimulating the cardiac ganglia. Digitalein and digitoxin do not directly raise arterial tension and slow the pulse, but they do dilate renal blood-vessels, increasing the flow of the urine, and in this respect their therapeutic value is great, especially in cardiac affections accompanied by low arterial tension. The author contrasts digitalin and digitoxin, the latter being the chief ingredient in the leaf, which should be standardized in the treatment of its contained digitoxin. It is superior to digitalin in its diuretic action. Its action is prompter and more certain and it is less liable to cumulative action. He thinks it has the brightest future of all the digitalis preparations and in combination with nitroglycerin acts admirably. A number of cases are reported showing the cardiac and other conditions in which the drug has been used by the author.

14. **Uremia.**—Jelks calls attention to the fact that uremia may occur in persons with perfectly sound kidneys. The functional activity of this organism may be so affected that uremic symptoms arise. He notices the methods of examining for solid constituents and reports a number of cases of cardiac and other symptoms apparently connected with functionally, etc., insufficient excretion.

16. **Epidural Hemorrhage.**—The diagnosis of this condition is most important, and the symptom which is well nigh pathognomonic, as pointed out by Horsley, is the interval of consciousness between the time of injury and the first cerebral symptom, which may last for a few minutes or many hours, depending on the severity of the injury. Epidural hemorrhage frequently exists without such interval, but this class of cases will be found complicated with some trauma of the brain. Other important signs are injury to the scalp, if only a slight contusion, inequality of pupils, gradual appearance of coma heralded by stupor; early convulsions point to the seat of pressure. It takes a considerable amount of blood to cause sufficient pressure for cerebral symptoms and usually a number of centers are involved. The hemiplegia and paraplegia come on gradually according to whether the hemorrhage is at the side or top of the brain. Epidural hemorrhage at a distance from motor centers is not likely to cause convulsion or paralysis until it causes general compression and localizing symptoms which should be looked for. Breathing is slow, the pulse usually slow and full, later becoming rapid and weak, the temperature subnormal, and cases without fracture and contusions and of sufficient severity should be operated on as soon as possible under favorable circumstances. The author reports a case.

17. **Closure of Cutaneous Wounds.**—The following method is advised by Lilienthal for closing skin wounds or other eruptions so as to avoid infection, stitch abscesses, etc. The deep layers of the wound are closed with various materials, but the wound of the skin is covered with sterilized gutta-percha and the edges approximated with India rubber zinc plaster. He has had no infection in these cases, notwithstanding the plaster he had used was not considered aseptic, but has had one made recently by Johnson & Johnson, sterilized and kept in a sterilized container. When applying the plaster one must be careful to check all hemorrhage and to dry the skin thoroughly with alcohol or ether. The strips are then laid on. The method should not be used where there is tension. It is applicable in partial closures when drainage is employed. On the fifth or sixth day the strip should be removed by loosening both ends, drawing them toward the wound.

18. **Tracheal Injections.**—Murray calls attention to the method of introducing remedies by tracheal injections. The curved canula of the syringe is passed between the vocal cords, slowly injecting the fluid into the trachea, the Schadel syringe being used. He gives Mundell's prescription for injection, consisting of 5 grams each of the essences of thyme, eucalyptus, and cinnamon, with 100 c.c. of sterilized olive-oil, 3 c.c. being injected three or four times consecutively. The usual first effect of the injection is slight explosive cough. Out of thirteen cases treated during the past seven months all but three have been decidedly benefited; cough and expectoration have been lessened and temperature lowered. In no case has he seen glottic spasm follow the injections. The antiseptics used enter at once into the field of their labor, and penetrate to the farthest limit of the respiratory space, coming into immediate contact with the toxins as they are generated. While he says he does not undertake to estimate the full value of the treatment he thinks it may be fairly said that it does lessen the cough and expectoration and improve the general condition.

20. See abstract in The Journal, xxxv, p. 1172.

32. **Suprarenal Capsule.**—Bates emphasizes some facts already published and calls attention to the use of suprarenal capsule with its hemostatic action in operations on the eye, ear, nose and throat, urethra and uterus. He concludes his paper by saying that suprarenal extract is the most powerful known hemostatic and when properly used has no objectionable properties. When it is used locally, hemorrhages from the mucous membrane can always be controlled. Its internal use as a hemostatic is sometimes efficient. When it controls hemorrhages locally or otherwise its effects are noticeable in less than a minute from its administration. The dried powdered gland, he thinks, is the only preparation for internal use.

22. **Appendicitis.**—Miller maintains that there is a reaction taking place against the exclusively surgical treatment of appendicitis. That cases have occurred under surgeons where the appendix was found healthy speaks strongly against the too universal and indiscriminate operation. He thinks sufficient stress has not been placed upon the point of dulness and in every case in his experience, where he has relied upon this symptom, he has been led to a correct conclusion. In cases without any pronounced inflammatory symptoms, in which dulness was marked, he found the appendix indurated and adherent. Twenty cases are reported which show the significance of this symptom.

23. **Gonorrheal Infection.**—Tenney first notices the nonspecific discharges and then passes to the question of actual gonorrheal infection. He emphasizes the importance of the persistence of the infection and does not hold that there is much danger of infection without any visible discharge for months. He discredits Noeggerath's and other estimates as to the extreme frequency of gonorrhea.

24. **Bacteriologic Diagnosis of Gonococcus.**—The most important precaution in examining for the gonococcus, according to Richardson, is to smear the pus properly on a cover-glass; usually it is too thick. Another important precaution is to be sure that the anilin oil gentian-violet has not decomposed. In examining for the organism in inflammatory processes other than gonococcic conditions, something being more than a cover-glass examination and the application of the Gram's method of staining is needed. The suspected microbe must be isolated in pure culture, its peculiarities found to agree with the known pictures of the gonococci, and the micrococci composing such colonies must be tested by the Gram's method and have a decided tendency to group in fours. The test of the behavior of the cocci so isolated, toward the Gram's method, is of great importance, and is to be applied with certain precautions: 1. The cultures must be over forty-eight hours old. 2. The cover-glass preparation must not be too thick. In short, no culture is to be regarded as a culture of the gonococcus unless the organism occurs only in special media, decolorizes by Gram's method and shows a decided tendency to grouping in tetrads.

33.—See abstract in The Journal, xxxv, p. 1685.

34. **Parasites in the Blood.**—Le Wald notices the *filaria*, recognizing the three forms, nocturna, diurna, perstans, and the plasmodium malariæ, the peculiarities of which are briefly stated.

35. **M. S. Mixture.**—The title of this article defines the mixture. Adams concludes that its chief advantages are: 1. State of excitement and struggling are not marked. 2. It requires a short time to get a patient under, five or ten minutes. 3. Very little of the anesthetic is required. On an average about 40 c.c. are used in an hour. 4. It is a comparatively safe anesthetic. 5. It is very pleasant to take. 6. The after-effects are not marked. 7. Patients recover quickly. 8. It can be used in nearly every condition in which either chloroform or ether is employed.

37. **Insanity.**—Beebe discusses the conditions and symptoms that constitute insanity, basing the diagnosis: 1, upon the state of feeling—emotions; 2, upon the reasoning faculties—intellect; 3, upon the power to do or not to do—volition—the proper balance of these three being sanity. The due consideration of these will establish the fact whether the patient is in a state of mental daylight, twilight, or darkness.

38. **Spinal Anesthesia.**—Whitacre reports four cases of spinal anesthesia in which the method was successful and the by-effects not serious. The dangers, he thinks, are the possible mortality which may result from a toxic effect of the drug upon the respiratory or cardiac apparatus or from the production of thrombi or emboli which may result from infection, or from the too rapid withdrawal of the cerebrospinal fluid. Symptoms of poisoning or depression may occur short of death, and in quite a majority of cases severe vomiting has been noticed. The method never can be applied in certain classes of patients, i. e., nervous women and children, where consciousness of the operation will enhance the shock, and there is little probability that it can be applied to the higher portions of the spine without permanently increasing the dangers. On the other hand, there are a large number of cases where renal, cardiac and pulmonary disease exists, in which this method is far less dangerous, even with our present knowledge, than general anesthesia, and he also believes that the method will be perfected, giving us a less toxic drug with equal efficiency. Other advantages are that the patient can often give valuable aid during the operation and can be consulted in regard to more extensive measures than were originally intended. The usual after-effects of ordinary anesthesia are generally absent and shock in the properly selected cases is less than often occurs after general anesthesia.

39. **Unclean Mouths.**—The dangers from mouth bacteria in producing dyspeptic and other symptoms are noticed by Fletcher, as also the dangers from more virulent organisms. The mouth can not be kept absolutely clean from disease germs, but they can be gradually reduced in number by hygienic treatment, securing the best possible development of the teeth and glands, the use of antiseptics and the prohibition of consumption of such foods as specially foster the growth and development of fermentative and putrefactive germs. The

fermentation of carbohydrates is specially noticed as the cause of acid fermentation, destroying the teeth and favoring bacterial growth. We can not disuse them altogether, but they can be reduced to a minimum. He thinks that the alkaline antiseptics are absolutely necessary to properly cleanse the mouth and should be applied to it at least twice a day, even in the best conditions, and two or three times as often with the majority of persons.

42. **Seborrhea.**—After noticing the views of authorities on the subject, Loth endorses the opinion of Elliot that the only true seborrhea is the condition usually referred to as seborrhea oleosa, which may occur not only on the scalp but also on the face, sternum, interscapular and genital regions. Any inflammatory process which would develop on such a surface would be characterized by features of true seborrhoic eczema and syphilitic or psoriatic lesions similarly modified. Seborrhea does not produce eczema, but acts only as a predisposing factor. The conditions known as seborrhea sicca, pityriasis capitis, seborrhea corporis, etc., are all degrees of seborrhea dermatitis. We have merely clinical grounds for believing that these affections are parasitic in character. These are the circinate character of the lesions, their marginate outline, peripheral extension while clearing in the center, the evidence of infection derived from brushes used by a person having the disease, the spreading from one member of a family to another and the response to antiparasitic remedies.

43. **Trigeminal Neuralgia.**—Hughes protests against too much surgical treatment of trigeminal neuralgia and in forty years' practice in cases that he has had the chance to steadily treat, he has yet to see the first go to the surgeon. His chief reliance in neuralgia, especially sciatica and facial, has been on belladonna or atropin, strychnin, large doses of quinin and more recently hypoquinidol, which is a phosphate of quinin. He has also supplemented this with persistent galvanization of the affected nerve tracts and some form of bromid, the hypophosphites of iron, and gelsemium in green root tincture for direct anodyne effect. He uses locally, ether, menthol, heat and electricity. In many cases also he has used Fowler's solution and coal-tar anodynes. In neuralgia there is a peculiar state of special aptitude to pain in the nervous system; there is weakness and proneness to become affected by cold, etc., that would in other cases be harmless. He draws the line on uterine diseases as the direct cause, not attributing neuralgia to them. As regards surgical operations, he is conservative. He thinks that the complete removal of the Gasserian ganglion should be undertaken only as a last resort. He objects to this procedure: 1. Because of the curability of the disease by medication if rightly employed, in many cases where sufficient vital stamina remains, such as would withstand the ordeal of ganglion extirpation. 2. Because trifacial neuralgia is not a disease exclusively of the ganglion. 3. Because it appears to be a disease not confined to the fifth nerve or the beginning at the Gasserian ganglion. It is a morbid state of the sensory nervous system with characteristic trigeminal manifestations and not exclusively a local disease. 4. Because as good an effect can be obtained by rest and recuperation. 5. Because of the trophic irritative or paralytic sequelæ in the cornea and face, the herpes, ear and jaw involvement, ptosis and fourth and sixth nerve paralysis and, finally, the mortality of operation in some cases. The infection which follows the perforation of the antrum, and the shattered health of many surviving also seem to forbid it. The fact that power of tension of the tympanum comes from the fifth nerve and otic ganglia is not considered as it should be by surgeons. His suggestion for a neurosurgical plan of successful treatment of trifacial neuralgia when neurotherapy fails would therefore be this: Mentally prepare the patient for its radical relief by securing hopeful consent to a combined surgical and neurologic treatment. Put her or him in bed, give chloroform, extirpate the involved peripheral nerves if you wish, keep both the eyes closed—not necessarily by stitching—for the same length of time as one is kept closed by stitching to prevent the eye sloughing, so likely to follow Gasserian ganglion extirpation without it. Keep the eyes closed to secure brain and nerve center rest. Keep visitors away from the patient, maintain absolute brain and neural quiescence, such as follows the operation, by appropriate medication, and maintain at least a six to ten weeks' treatment on the lines above indicated. With this plan put in faithful practice he thinks Gasserian gangliotomy would take its place among the lost arts.

45. **Tubercular Peritonitis.**—From a study of the literature, Neff concludes that tubercular peritonitis is a disease to be treated surgically by laparotomy, rapidly and carefully performed. The danger is slight, the mortality being less than 3 per cent. As regards the theory of the curative effect of laparotomy, he thinks the antitoxin theory of Gatti the most rational, though several of the various assigned causes may combine. Sepsis is not apt to occur on account of the pathologic changes that have taken place in the peritoneum, and tubercular infection of the wound is always absent. Antiseptics are useless and drainage should be avoided for its tendency to permanent fistula. Most of the deaths after the operation have been due to a general tuberculosis or tuberculosis of some other part. The successful treatment of this condition depends on the diagnostic ability and good judgment of the surgeon.

48. **Jamaica Ginger Amblyopia.**—Dunn reports two cases of this condition, the only previous cases that he has learned of being those of Thompson and Woods. See The Journal, xxxvi, p. 34.

58. **The Esophageal Glands.**—Two varieties of these glands, the submucous, which has already been recognized, but the other variety entirely distinct from this, are described by Hewlett, from their situation as superficial to the muscularis mucosa. They occur mainly in two localities, in areas in its upper portion and near the cardiac orifice where they extend a short way toward the stomach, being replaced by typical fundus glands, and they have been grouped by some with the gastric glands. Hewlett describes the structure of these glands in detail, noticing the previous observations of Rudinger, Schaffer and others pointing out their distinction from the submucous glands and raising the question as to the possibility of their giving rise to carcinoma. He has collected six cases of adenocarcinoma of the esophagus, to see if their location bore any relation to these glands, but did not find them situated within the usual limits of the latter.

59. **False Diverticula of Intestine.**—By a true intestinal diverticulum is understood one whose walls are composed of the entire thickness of the intestine. A false diverticulum, on the other hand, is a hernia of the mucosa and submucosa through the muscular wall and consists only of mucosa and serosa with intervening connective tissue. It is also desirable to distinguish between congenital and acquired diverticula, but the false are always acquired. Their etiology is somewhat obscure. Traction has been suggested, but it is not generally accepted as the cause. For a long time it was held that they were due to increased intestinal pressure, feces, gas, etc. Klebs has suggested that they may occur with growth of the mesentery, in length outstripping that of the blood-vessels, or more probably with traction in later life upon the mesentery by the intestine. The funnel-like attachment of the ventral wall to the entering mesenteric vessels becomes converted into diverticula. The greater frequency of intestinal diverticula in elder and obese persons supports these later views. Other authors have attributed the origin of diverticula to "pulsion" rather than traction and Hansemann has defined more precisely the vascular relationship. It has been shown by Heschl that the intestine ruptures under pressure at the point where the diverticula are found. Experiments by Good and Hanau have produced the same formations. Senility favors these conditions and various other etiologic factors favor the normal lessened resistance. Chronic constipation may be considered a predisposing factor. Fatty degeneration of the muscularis has been mentioned. Separation of the muscular fibers of the duodenum by the common bile-ducts favors diverticula in that part of the duodenum, stenosis leading to increased intestinal pressure and in general sluggishness of the intestinal

functions may produce it. These are factors unconnected with clinical symptoms and only discovered postmortem, but in some cases pathologic processes have followed, such as ulceration and inflammation due to filling of the diverticula with feces, peritonitis, etc. One of the favorable terminations is an increase in the connective tissue element, but this is rare in these acquired formations. Fischer reports and discusses a number of cases of interest as bearing on the etiology and pathology.

62. **Islands of Langerhans in Chronic Pancreatitis.**—The conclusions of Opie's article are: 1. That congenital syphilitic pancreatitis retards the development of glandular acini but does not affect the islands of Langerhans. Embedded in the stroma, but not invaded by it, the latter maintain their continuity with the small ducts and acini with which they have a common origin. 2. Two types of chronic interstitial inflammation affecting the development are distinguished: *a.* Intralobular pancreatitis localized chiefly at the periphery of the lobule implicating the islands of Langerhans only when the sclerotic process is very advanced. In pancreatitis following obstruction of the ducts the islands long remain unaltered though embedded in dense scar-like tissue. *b.* Interacinar pancreatitis. In this type the process is diffuse, invading the lobule and separating individual acini; the inflammatory change also invades the islands. 3. Relation has been observed between lesions of the islands of Langerhans and the occurrence of diabetes mellitus. In one out of eleven cases of intralobular pancreatitis mild diabetes occurred. Sclerosis in this case followed obstruction of the ducts by calculi and was far advanced and affected the islands of Langerhans. 4. In two of the three cases of intracinar pancreatitis diabetes was present. The third case was associated with hemochromatosis, which at the latter stage is associated with diabetes from pancreatic lesions. In the fourth case of diabetes, hyalin deposit between the capillaries and the parenchymatous cells had so completely altered the islands of Langerhans that they were no longer recognizable.

66. **Spinal Tuberculosis.**—Wiener insists on the importance of early diagnosis of the treatment and the need of paying special attention to reflex spasms of the dorsal muscles. The conventional plaster-of-Paris jacket should not be relied on. Permanent extension is the reliable measure. He does not think much of forced correction of the spine in tuberculous deformity unless in cases where the deformity is of recent date.

67. **Addison's Disease.**—Willson reports a case of Addison's disease and discusses the pathology and symptoms. He thinks that the symptoms are best accounted for by the combined effects of suprarenal inadequacy, and sympathetic irritation, either functional or organic. He compares adrenals in their influence on the system to the sexual glands, both atrophying in old age and raising blood tension.

70.—See abstract in The Journal of January 12, p. 126.

80. **Syphilis and Associated Affections.**—The relation of syphilis to other disorders is stated by Bulkley, who recognizes that various affections may complicate a specific disease. There may be a simultaneous or successive infection, but there is need of more definite microscopic studies in regard to the ordinary infections of specific lesions. As regards infection of general disease, he finds that variola seems to aggravate syphilis while it exists, according to some observers, and others have seen syphilitic lesions disappear during the course of smallpox. The testimony, therefore, is somewhat varying. As regards erysipelas there is some evidence that it has a counteracting effect on syphilitic virus. There is, however, a lack of experimental and clinical observation. Measles and scarlatina seemed, according to Mauriac, to hasten the eruption; typhoid may temporarily affect specific eruptions. The subject is worthy of further observation. Other disorders like syphilis and malaria, syphilis and diphtheria, tuberculosis, lepra, and sepsis are all noticed. Bulkley concludes that in erysipelas there seems to be an antibiosis, as cases are recorded where erysipelas appeared to be curative. The toxins of some of the other infectious diseases seem to have some effect in arresting the progress of syphilitic lesions in their early stages, but as their effects pass off the virus reasserts itself. Metabiosis, where one organism prepares or paves the way for another, seems to be indicated in malaria, as it temporarily renders the subject peculiarly liable to severe symptoms in syphilis. Symbiosis where the two morbid actions assist each other, is illustrated by tuberculosis. Lepra and septic conditions aggravate both primary and later manifestations, and many cases are recorded where the pus-producing micro-organism was found in connection with syphilitic lesions. He suggests that it is worth considering whether the unusual severity of certain cases is not largely due to mixed infection. The paper concludes with a lengthy bibliography.

81. **Wheal Lesions in Syphilis.**—The absence in American literature, of mention of the wheal type of syphilitic lesions, is noticed by Klotz who reviews certain authorities and his own observation showing that such do occur. The appearance of wheals is generally supposed to be due to an angioneurosis, but the author suggests the embolic process which would account not only for the appearance of patches of syphilis but for the primary localized syphilis, for which, heretofore, we have not been able to offer a satisfactory explanation.

82. **Unusual Phenomena of Syphilis.**—Zeisler reports a case of othematoma occurring without any known cause, in a physician who had been accidentally infected with syphilis. It promptly disappeared under administration of iodid of potassium, without causing any injury, save a slight thickening of the cartilage in the locality. About six months after the occurrence of this accident the patient had symptoms of Meniere's disease and has since had peculiar nervous phenomena, which possibly suggests some pathologic alteration at the base of the brain. Zeisler suggests, therefore, the possibility of othematoma being due to some central origin.

97. **Bromids.**—Clark regards bromids only one of the many drugs to be employed in epilepsy, but it is the one par excellence for treating the seizures. The formula which he considers the best is the elixir of the triple bromids, containing 5 gr. each of potassium bromid, ammonium bromid, and sodium bromid to a dram of simple elixir. Every possible precaution to prevent brominism must be taken. The organism must be kept at the highest functional state; hot and cold baths, massage and electricity should be given. He orders prolonged hot baths in patients in good condition, twice each week on retiring, and a cold shower bath and a friction rub every morning on rising. He allows coffee, but no alcoholic stimulants in connection with these cold packs. The bowels must be watched, mouth kept clean, and any signs of bromid intoxication be promptly treated. When the bromid salts can not be given in high doses, he uses the bromids and bromin in emulsion, which is less irritating to the intestinal tract, not constipating and less toxic. It also seems more lasting in its effects. The greatest adjunct to the bromids, however, he thinks is the method which he calls hypochlorization or salt starvation. This was introduced by Toulouse and the *rationale* is simply to substitute bromin for chlorin in the tissues, both chemically and physiologically. Linossier, in investigating the subject on animals, found that bromhydric acid should be substituted in the stomach for chlorhydric acid. Bromin is not a foreign substance, but is a true mineral substance of the body. It is difficult, however, to get epileptics to discontinue salt altogether, so semistarvation of salt is all that can be expected of them. Bromid is taken into the system more readily as salt is dispensed with. One of the best and easiest ways of carrying out this adjunct of bromid treatment is the establishment of a milk diet with occasional removal to a mild salt diet, and Clark gives a dietary modified from Toulouse. Cases are quoted, and in conclusion he summarizes as follows: 1. Bromids still hold a very prominent place in epileptic treatment. 2. Tonics must be given constantly while administering bromids. 3. Bromid salts should be given gradually to find the epileptic's sedative level. 4. Baths, high enemas, alimentary antiseptics, massage and electricity are absolutely essential to successful bromid medication. 5. Bromin is a worthy successor to bromid in many cases. 6. Salt or semisalt starvation is a great adjuvant to the bromid treatment.

98. **Rheumatic Manifestations.**—Richy advocates the use of salophen in rheumatic symptoms and reports two cases, one of rheumatic pericarditis and the other of joint rheumatism treated with this drug, beginning with 10 or 15 gr. and gradually reducing the amount. He also finds this almost a specific in influenza. He has also used it to advantage in headaches dependent upon rheumatic diathesis and sciatica, in tonsillitis and scarlet fever.

103. **Formaldehyde.**—The different methods of disinfecting by formaldehyde are described by Bissell, who gives a report of experiments made by himself with various cultures and sums up the application of formaldehyde to household disinfection as follows: 1. It is the most satisfactory of the gaseous disinfectants. 2. Its penetrating powers are extremely slight. 3. A certain degree of moisture facilitates its action. 4. It should always be supplemented by a cleansing process.

113. **Leprosy in Hawaii.**—Davis gives a very good description of the Molokai leper colony, which he visited in 1898; the history of leprosy in the islands, with tables of the mortality, etc., is given. He thinks the low moral standing of the natives, habits of using the same beds, clothing, and pipes, also the fact that the leper was never an outcast among them, account for the spread of the disease. Vaccination also during the epidemic of smallpox in 1852 and 1853 undoubtedly helped to spread the disease. The native Hawaiians have no special dread of the disorder and many cases are on record where natives have tried to contract the disease in order to join friends or be provided for in the Island of Molokai. As regards treatment, he is pessimistic. He finds nothing that is curative and practically no medicine is administered in the leper settlement.

119.—See abstract in The Journal, title 42, p. 403.

121. **Posterior Uterine Displacements.**—The recapitulation of Chase's article is as follows: 1. Posterior deviation with fixation from adhesion is usually a serious menace to health and often a barrier to childbearing. 2. This condition can be best treated by laparotomy. 3. After the adhesions have been severed the cure should be completed by maintaining the uterus in an anterior position: *a*, by intraperitoneal shortening of the round ligament; *b*, if this is insufficient resort should be had to anterior abdominal suspension of the uterus. 4. Experience, while not settling all points, demonstrates that efforts to maintain the uterus in an anterior position, either by ventrosuspension or fixation, are from the uncertainty of the degree and extent of the adhesion not devoid of danger in case of conception, which should be considered, and, in certain instances, guarded against. 5. Ligation or resection of the Fallopian tubes is a more rational procedure than ovariotomy for the prevention of conception and more justifiable, as it does not unsex the woman and saves her from a premature menopause and its unpleasant consequences. 6. The value of these methods of treatment of posterior deviations is amply demonstrated and their employment should be more generally adopted.

123. **Uterine Curettement.**—Moriarta considers curettement in septic and sapremic conditions as complications of the puerperal state. He specially dwells on the importance of thorough removal of infection spreading retained tissues, the necessity of careful and conscientious measures in the operation of curettement, the danger of perforation of diseased uterine wall, the chances of a long and patulous cervix leading to mistakes, and gives the details of the technique. He uses anesthesia according to the conditions, sometimes he employs it and sometimes not. After scraping and the removal of new adhesive tissue, which is done with a good-sized Rhamstetter irrigating curette, he follows it with a small-sized curette, going over the walls slowly and methodically. Following the scraping he uses a hot solution of bichlorid—1 to 2000—followed by a saline solution of sterile water; he then packs with iodoform gauze. If large quantities are needed it is well to wash it to prevent iodoform poisoning. The gauze is removed at the end of twenty-four hours and usually not replaced.

125. **Intrapelvic Hemorrhage.**—Manton reports a case of excessive uterine hemorrhage due to a pathologic new growth, a fibroma, in the lower portion of the broad ligament encroaching upward with involvement of tube and causing degeneration and destructive changes in the blood-vessels of the part.

FOREIGN.

The Lancet, February 2.

Considerations Touching the Pathology and Relations of Diabetes. W. Howship Dickinson.—The morbid anatomy of diabetes, according to Dickinson, is as yet somewhat uncertain. We have nothing that serves to define the disease, such as the hepatization of the lung in pneumonia. The most frequent morbid appearance is extravasation of the blood in the perivascular canals of the brain. Of twenty-two diabetic patients, eight displayed this phenomenon. Other signs of morbid action are the enlargement of the perivascular canals, giving the white matter a cribriform appearance, and the abnormal contents of these leucocytes and amorphous debris. In the cord we sometimes have dilatation of the central canal. In two out of the eight cords which he had, this was present, and also a peculiar hyaline modification in the lateral parts of the gray horns. R. T. Williamson has published cases of diabetes with evidence of degeneration of the posterior column. In the liver we have certain characteristics varying from health. The organ is large, red, hard and congested and the veins contain coagula. Dickinson does not dwell on the consequential changes of diabetes, such as the inflamed states, etc., but passes to the clinical causes. He mentions emotional disturbance, anxiety, and notices that locomotive engineers are specially liable to the disease, probably owing to the anxious nature of their work. Heredity is a most prominent cause and the association of diabetes with gout or hereditary disorders is notable. The clinical association on the side of the nervous system, of loss of the patella reflex, is noted. This may be connected with some change in the cord or nerves, though morbid changes have not been found in the peripheral nerves. Peripheral neuritis has been regarded, however, as one of the results of the toxemia of diabetes and this may account for the symptom. Another nervous phenomenon of diabetes is the occurrence of excess of earthly phosphates in the urine, especially phosphate of lime, which is unexampled in any other disease. He has placed on record cases where the daily increase of lime exceeded 3 grams. Still another symptom is the peculiar dusky redness of the complexion, often seen in advanced and severe cases. The author's investigations at the Bethlehem Hospital, of the urine of fourteen out of 106 lunatics, gave appreciable reductions of copper, together with some degree of darkening with liquor potassæ, but in no case marked diabetic characters. He is inclined to think that glycosuria accompanies insanity in a slight degree, and in a small proportion of cases. We are not yet at the bottom of the pathology of diabetes; what we know points to the undoubted origin of the disease in mental causes. Its association with larger excretion of phosphate of lime, the loss of the patellar reflex and the glycosuria of insanity are significant as to its relations with the nervous system.

Hemorrhagic Diathesis in Typhoid Fever and Its Relationship to Purpuric Conditions in General. Albert G. Nicholls and G. Everett Learmonth.—A number of examples have been recorded of hemorrhagic complications of typhoid, and the authors notice the opinion of authorities in regard to these. The hemorrhagic type was first brought to notice by the earlier French school, notably by Trousseau, but the cases are exceedingly rare. They report, in elaborate detail, the history of a case with postmortem and bacteriologic examination of the blood, peritoneal cavity and kidneys. The case was atypical in that the intestinal lesions were most marked in the large bowel, the spleen was small and there was a mixed infection with staphylococcus albus. One main factor of the hemorrhages was a fatty degeneration of the basement membranes of the capillaries and the various endothelial cells, especially notable in the lungs and kidneys. They found but few cases recorded of general hemorrhagic diathesis in typhoid. As regards the positive conditions, they notice the views of Gerhardt that the hemorrhage tendency has been more frequently observed since the introduction of the cold bath treatment. A too rigid commitment of the patient to an animal diet may be an important cause, as tending to a scorbutic condition. Its appearance seems to be most common in children and early adult life. The vast majority of cases are found in those suffering from a severe form of typhoid, the patients are much prostrated, temperature high and heart weak. The anatomic lesions differ very little from those of ordinary typhoid, but the authors are inclined to credit the action of special microorganisms as having to do with the symptom. The condition is a serious one and the treatment is necessarily symptomatic.

Treatment of Typhoid Fever. FREDERICK J. SMITH.—In cases where the diagnosis is certain the author says there are two general principles of treatment: 1. Examination of the stool. 2. The appetite of the patient. He maintains that one stool should be examined every twenty-four hours during the active course of the disease, to determine whether there is undigested milk or other food, blood or sloughs which are significant, or a due proportion of feculent debris. He has made it a cardinal rule to allow the appetite to be the sole arbiter of the diet, providing vomiting, hemorrhage and abdominal distention are not present. The temperature he ignores. In the early stages of the disease, where the appetite is in abeyance the temporary administration of water as the only food has given good results. We do not know definitely just how long this should be continued, but he has kept it up for four or five days with the best results, and the wish of the patient for foor is the only reason he had for stopping it. Milk is the standby for diet when food is given, but it should be administered in a form where balling and curdling does not take place, for example liquid custard or even baked custard if broken up fine, in bread and milk, and he would allow eggs slightly boiled or poached at any stage. All commercial foods he thinks are of doubtful value. Meat, if given, should be put through a sausage machine or minced as fine as possible. The patient may be allowed to nibble stale bread to keep the jaws exercised. The foods to be avoided are those which remain in small hard particles on leaving the stomach. The quantity and time must be regulated, about once in four hours in small quantities, but the patient should not be awakened for the purpose of giving food; sleep is more important. Between meals nothing should be given but cold or hot water, as preferred. Of the complications, vomiting, as an exhausting symptoms, should be avoided if possible. Tympanites is an ominous symptom and on its discovery all foods should be stopped, excepting water. His own plan is to at once administer 2 drams of sulphate of soda every two hours until the bowels are acting freely. It usually follows constipation. He also orders an ice-bag to the abdomen, and resorts more persistently to chlorin water or salol as an antiseptic. Constipation need never be permitted to persist. He uses sulphate of soda and calomel as the usual laxatives. If the diarrhea should be excessive, he would investigate the food and stimulants; if due to indigestion, stop all food but water. If there is much sloughing material, showing signs of ulceration, the symptom is bad. He has used an enema containing opium, nitrate of bismuth and ipecacuanha. Pyrexia can be best treated by tepid sponging. He does not favor cold baths as a rule, though in some cases they may be indicated. If starvation and opium are found to be useless in hemorrhage nothing else is of the slightest use. As to drugs, he has a preliminary routine treatment, giving 2 gr. of calomel at once, following it with 1 gr. every night. Mixtures containing carbolic acid or chlorin water are given, or he gives salol in water three times a day. Of other drugs he uses practically none excepting in emergencies. Alcohol, the thinks, is unnecessary, though a little may be allowed those who are in the habit of taking it. He does not object to beer drinking. The importance of the physician giving personal attention to the question of cleanliness is emphasized, and he expresses the opinion that the future of therapeutics in typhoid will be in serum-therapy.

Intraperitoneal Method for Radical Cure of Inguinal Hernia. T. H. WELLS.—The writer describes an operation performed by Mr. Symonds, in inguinal hernia, which he sums up in seven stages: 1. An incision 2½ inches long in the linea semilunaris, ending over the external abdominal ring and passing through the skin, fat and superficial and deep fascia. 2. Deepen the upper 1½ inches through the abdominal muscles, transversalis fascia, and the subperitoneal fat, and having arrested all hemorrhage, open the peritoneal cavity. 3. Explore the sac with the finger and remove any gut. 4. Insert forceps along the palmar surface of the finger, seize the apex of the sac and invert it, bringing it out into the upper wound. 5. Stitch the sac, after giving it a couple of twists on itself to obliterate its cavity, to the peritoneum. 6. Stitch up the external abdominal ring. 7. Close the wound by bringing the structures layer by layer into accurate apposition. The advantages are its quickness, obliteration of the neck of the sac high up, the inverted sac aiding in forming a firm scar. The sac and its contents are explored and, if necessary, the sac opened below quickly and safely. The incision allows any methods of closing the inguinal canal and external ring carried out as the operator may desire.

Bulletin de l' Acad. de Med. (Paris), January 8 and 22.

Total Resection of the Stomach. J. BOECKEL.—This is the first gastrectomy done in France and the fourth on record. The operation lasted 1½ hours; the patient made a rapid recovery, was up the twenty-second and left the hospital the thirty-third day. She had previously been much emaciated by the carcinoma which rendered the resection necessary, and after its removal gained seven pounds in a month, and thirteen more in another six weeks. The stools are regular and normal. She eats the food at the family table with no restrictions except quantity, cabbage and sauerkraut. A week after leaving the hospital her lunch was veal, carrots, fried apples, wine, biscuits and grapes, with three cups of black coffee, according to a letter received from her. The removal of the entire stomach is an operation comparatively simple and the marked and regular increase in weight testifies to perfect and regular assimilation without it. Boeckel is inclined to believe that its application is not limited to cases of carcinoma. The first point in operating is to free the greater curvature of the stomach by severing the gastro-colic ligament; then to detach the upper portion of the stomach between forceps, one placed immediately above or below the cardia; this is followed by freeing the lesser curvature by severing the gastro-hepatic ligament. The lower portion is then liberated after section of the upper portion of the duodenum between the forceps. The last step is the anastomosis of the cardiac ostium with the duodenum and suture of the abdominal wall without drainage.

January 22.

Obstetric Spinal Analgesia. GUENIOT.—Spinal cocainization has been employed in 60 obstetrical cases in France. A review of these shows that the small amount of cocain required—1 cg. of cocain in a 1 per cent. solution is ample—obviates the inconveniences sometimes observed in surgical operations. This amount induces complete analgesia below the umbilicus, suppresses the pain caused by the contractions of the uterus and the passage of the child, and far from interfering with delivery, seems on the contrary to accelerate it; it imparts greater energy and regularity to the contractions and also enables the woman to make more energetic and more sustained efforts as they are painless. The analgesia lasts from seventy minutes to two hours. No serious danger for mother or child has been observed in consequence, the only phenomena of intoxication noted being cramps or slight tremor in the limbs, transient headache, slight vomiting and a slight rise of temperature. At the same time, it is best to avoid using this method of anesthesia in patients with lesions of the heart or large vessels, chronic affection of the respiratory apparatus, or disease of the nerve centers, especially brain tumors. It is also contraindicated when absolute asepsis can not be secured. Further special contraindications are extremely rapid course of delivery, frequency and energy of contractions of the uterus or exaggerated tension of the organ, or the necessity of manual intrauterine intervention. The cocain evidently has a pronounced stimulating and regulating action on the contractility of the organ. If this fact is confirmed by further experience it will give the drug a high place in obstetrics. While it acts like ergot, it does not tetanize the uterus like the latter, and leaves the cervix permeable, at least to a certain extent. The indications for obstetric spinal cocainization are four: All obstetric operations which demand anesthesia, with the exception of those requiring the introduction of the hand into the cavity of the uterus; excessively painful delivery; extremely protracted course of the latter in consequence of weakness and irregularity of contractions, and lastly, a tendency to hemorrhage from any cause, inertia of the uterus, placenta previa, etc. The decrease in the amount of blood lost during delivery is extolled by Doléris as one of the chief advantages of obstetric laparotomies, and possibly also the preservation of the mental faculties. Doléris states that he is now aiming to make parturition altogether painless, but Guéniot doubts whether this will prove an advantage on the whole.

Bulletin Medical (Paris), January 23.

Dialyzed Raw Meat. Battesti.—A process is described which converts raw meat into a bouillon containing one-third more of the nutritive substances than the same amount of chopped meat, while the stomach is completely relieved of the task of digesting it. Fresh beef or mutton is chopped and put through a sieve, and 200 gm. of tepid water containing 5 gm. of hydrochloric acid are poured over it. In a few minutes 2 gm. of pepsin are stirred into the mixture and the whole is cooked at 38 C. for five to six hours. The product is a reddish fluid with a slightly acid and bitter taste, which can be corrected by adding a pinch of sodium bicarbonate.

Raw-Meat Muscle Serum. Ch. Richet.—The juice derived from meat submitted to a pressure of 25 kilograms to the square centimeter, cured dogs with experimental tuberculosis, in Richet's tests, as mentioned in The Journal at the time. He calls this fluid "myoserum," and states that the curative effect is evident only when as much is injected as 20 c.c. to the kilogram of body weight. He now announces that this myoserum, injected subcutaneously or into a vein, has marked toxic properties, killing animals when employed in the proportion of 5 c.c. to the kilogram. The juice commences to putrify in an hour or two in warm weather and, even when kept at the freezing-point, spoils in a few days.

Berliner Klin. Wochenschrift, January 14 and 21.

Modern Treatment of Diphtheria. T. Escherich.—In this review of what has been accomplished by antidiphtheria serum, Escherich gives his own experience, showing that while 54.8 per cent. of his patients with diphtheria—115 in all—between 1890 and 1894 were cured, since then 86.92 per cent. of 1147 patients have recovered. This includes 80.42 per cent. of recoveries in 378 cases of progressive croup and 57.38 per cent. in 176 cases of septic-toxic variety. None of the latter was cured before 1894, in his experience. He gives 1000 to 1500 units in localized diphtheria, double this amount in progressive croup, and three or more times this amount in the septic-toxic form, but as much as 20,000 units have been given by some physicians. The serum exanthemata have been reduced from 11 to 3 per cent. of the cases. He has had one fatality similar to the sudden death of Langerhans' child, that attracted so much attention a few years ago. A boy of 11 months was given a prophylactic injection on account of sudden laryngitis with symptoms of stenosis requiring intubation. He died in a few hours, with symptoms of heart failure. The heart was found very much dilated and the thymus soft and juicy, weighing 15 gm.

Succussion Sign of Kidney Affections. S. Goldflam.—Pain is a constant and unfailing sign of surgical affections of the kidneys, according to Goldflam's experience, but it is not always easy to elicit the pain. Ballottement is instructive, but even this fails at times. If the patient sits or stands, the trunk bent forward, and the physician strikes the lumbar region with the ulnar side of his fist, lightly but abruptly, perpendicular or lateral to the mass of the sacrolumbar muscles, a concussion of the region is produced which is painless in normal conditions and in certain kidney affections, but in surgical renal affections it induces pain similar to that caused by bimanual palpation or ballottement. No pain is induced by the succussion when the lesion is located in the gall-bladder, spleen or in any organ except the kidney.

Centralblatt f. Bakteriologie (Jena), December 8, 24 and 28.

Theory of Disinfection of the Hands. H. Marx.—The Journal mentioned at the time, Marx's announcement that the accumulation and localization of the Babes-Ernst corpuscles in bacteria is a visible standard for their virulence and vitality. He now announces that the aim of disinfection of the hands should be to render them a destructive soil for microbes, not necessarily to remove all the germs, but merely to prevent their further development. The standard for these conditions is the presence or absence of the Babes-Ernst corpuscles, and this should be the gauge for disinfection of the hands.

Requisites for Formalin Disinfection. C. Spengler.—Tubercle bacilli in sputa are not killed by formalin disinfection as usually performed. Spengler's experience at Davos has shown him that complete destruction of the bacilli is certain if the room is kept at 25 C. during the disinfection, and if the infected substances are moistened thoroughly and give off moisture under the influence of the fumes. The formalin must contain .5 to 1 per cent. formic acid.

December 24.

Microbes in Venous Thrombosis. M. Jakowski.—Venous thrombosis has been noted after typhoid fever, croupous pneumonia, puerperal affections and general septic pyemia. Two cases have been published consecutive to gonorrhea, and Korzon has recently reported a case of pyemia in the course of crural thrombosis during pregnancy. Jakowski has been experimenting on animals, injecting diphtheria or typhoid bacilli and toxins and then applying a ligature to the limb. The toxins alone or combined with constriction failed to induce thrombosis, and the tests were constantly negative in case of constriction alone. But injection of the bacilli and constriction resulted in the production of more or less thrombosis in every case. The bacteria probably lodged at some slight lesion in the vessel, possibly where the constriction was applied, and there elaborated their toxins. These toxins in turn acted destructively on the morphologic elements of the blood, breaking them up and liberating the fibrin ferment, thus causing the formation of a clot.

December 28.

Polymorphism of Water Vibriones. J. H. F. Kohlbrugge.—This author has succeeded in isolating from water several varieties of vibriones which resemble the vibrio of cholera in every respect and possess, in addition, the property of changing their shape. In water they are vibriones; on agar they become rods and cocci and resume the vibrio shape when replaced in water. The lively movements in each phase show that the changes are not degenerative processes.

Centralblatt f. Chirurgie (Leipsic), January 19.

Sterilization of Silk Catheters. M. W. Hermann.—The solution of ammonium sulphate, which Elsberg recommends for the sterilization of catgut (See The Journal, xxxiv, p. 1587), has proved a remarkably simple and effective method of sterilizing silk catheters without the slightest injury.

Centralblatt f. Gyn. (Leipsic), December 22 and January 12.

Gangrene of the Lower Extremity in the Puerperium. G. Burckhard.—Two cases are described which, with those collected by Wormser, raise the number on record to seventeen. In one of Burckhard's cases, the circulation in the leg was impeded from extravasation of blood owing to rupture of the uterus. All the patients recovered after amputation of the leg, except one, and two succumbed without surgical intervention.

January 12.

Injection of Paraffin for Surgical Prothesis. J. Pfannenstiel.—Gersuny's success in treating a case of incontinence of urine by the injection of paraffin was mentioned in The Journal, January 19, p. 219. Pfannenstiel followed his example in a similar case and reports that the results were almost disastrous; the paraffin produced embolism in the lungs and possibly also in the brain, without effect on the incontinence.

Deutsche Med. Wochenschrift (Leipsic), January 31.

Woody Phlegmon. R. Muehsam.—This author describes a case of the rare lesion termed ligneous phlegmon of the neck, by Reclus in 1896. It appeared suddenly during convalescence from broncho-pneumonia, in a robust man of 35, accompanied by slight temperature, and was persistently rebellious to treatment for four months, then gradually subsided, the fistula finally closing three months later. No bacteria could be detected in it, nor evidences of actinomycosis. In other cases various bacilli and cocci and actinomyces have been discovered, and the possibility of the latter infection indicates potassium iodid in dubious cases. One of Reclus's patients died from asphyxia by compression.

Heterogenesis of Lactic Acid Bacilli. A. P. Fokker.—In this preliminary communication, the professor of hygiene at Groningen announces that lactic acid fungi can be cultivated in incompletely sterilized or Pasteurized milk, which can originate only by heterogenesis from the casein. More colonies can be derived from sour milk than according to the microscope, are possible. When the sour milk is filtered in the oven, the filtrate contains more bacilli than when filtered at room temperature. In the latter case a vicarious albuminoid substance is found in the milk in the place of the absent micro-organisms. This albuminoid substance is closely related to casein, and when heated in an alkaline fluid, forms granules. The micro-organisms develop the second day in the incubator before fission of the bacilli occurs, unless the casein is removed, in which case none develops. The phenomenon of heterogenesis can best be observed in incompletely sterilized or fresh milk. Secondary colonies sometimes develop in the midst of the primary colonies, consisting of other varieties of fungi. True lactic acid bacilli cease to develop at a temperature of 60 C., but the lactic acid fungi described above continue to develop in Pasteurized milk. They frequently differ from the familiar lactic acid bacilli in certain respects.

Mastitis Adolescentium. R. Adler.—Besides the case described in this communication, there are only three cases on record in which histologic examination was made. In each of these the gland was normal in structure, and the affection is therefore not an inflammation but a physiologic and possibly atavistic hypertrophy of the mammary gland. The left breast was removed in a youth of 16 years, on account of swelling and pain for several months. There was no secretion. A few months later the patient returned with the other breast in the same condition. Suppuration does not occur in these cases except from secondary infection, the hyperemia offering a *locus minoris resistentiæ*. Adler recommends a celluloid shield to protect the region, fastened with plaster unless extirpation is necessary, abstaining from local remedies.

Wiener Klin. Rundschau, January 20 and 27.

Atypical Initial Symptoms of Tubercular Meningitis. J. Zappert.—Wherever the meningeal exudation makes its way out, the adjoining portion of the cerebrum will show most marked alterations at the autopsy, and possibly also encephalitic destruction. The fresher the exudation and the irritation of the pia mater, the less pronounced the lesion. The anatomist is able, from the postmortem findings, to reconstruct the clinical picture. In case of primary lesion of the total convexity, convulsions must open the syndrome. Aphasia must follow much involvement of Broca's speech convolution, and disturbances in the arm and face must result from a lesion in the cortical centers for the facialis and arm. The muscles of the face on the opposite side and in the further course of the affection, the upper extremity, the leg and, when the lesion is on the left side, the speech, are affected in turn. The cortical localization is clearly indicated by paralysis or cramps in one arm, and also when the symptoms include the face or limb of the same side. Zappert shows, by a number of examples, the actual occurrence of these phenomena as the early symptoms of tubercular meningitis. Cortical centers whose localization is less definitely established than the motor centers may predominate in the clinical picture, as, for example, when the motor disturbances are accompanied or preceded by sensory phenomena. He has had occasion to observe disturbances of the eye muscles and vision due to a lesion in their respective centers, hemianopsia accompanied by unilateral convulsions, in the incipient stages of tubercular meningitis. The primary commencement of the affection in the spinal membranes has also been clinically and anatomically demonstrated.

January 27.

Spray for Rinsing the Bladder. O. Kraus.—The tenacious secretions in certain forms of cystitis, etc., are very difficult to remove from the bladder, and the crevices still contain mucus after the most careful cleansing. This is obviated by the instrument devised by Kraus, which rinses the organ with spray under a pressure of 2½ atmospheres. Carlsbad water is efficient for the purpose, the force being supplied by liquid carbonic acid.

Wiener Klin. Wochenschrift, January 17 and 24.

Relations Between the Nose and the Female Genital Organs. A. Schiff.—By cocainization of the four genital spots in the nose Schiff succeeded in curing 34 out of 47 women of dysmenorrhea. Mechanical and hysterical dysmenorrhea were not affected, but all the cases of nervous origin, with or without palpable lesions in the genital sphere, and also the extramenstrual sacral and abdominal pains were cured. The facts observed indicate that the pain in many cases of dysmenorrhea and similar conditions is not actually genital but originates in menstrual or other irritation of the genital points in the nose, and is projected thence into the sacral and abdominal regions. This cocainization should always be done as a differentiating measure in cases of dysmenorrhea in which the pain does not cease with the commencement of the flow, in order to distinguish between the purely genital and the projected pains. In case of a positive result, the genital points should be cauterized or, better still, treated with bipolar electrolysis. The points must be determined through the speculum and thoroughly anesthetized, preferably with a 20 per cent. solution of cocain. He found it possible in a number of women to cause severe pains in the sacral or abdominal region by excitation of the genital points in the nose, thus corroborating the close connection between them. Weil has observed pain appear in the sacral region in men on tamponning the nose, and has cured forty cases of dysmenorrhea by cocainizing the genital spots in the nose, the influence of suggestion being completely excluded. Gomperz has had a similar experience, but found that the pains were never arrested for more than a year, after which they again required intervention. Grosmann has also temporarily cured epilepsy in a man of 45, arresting the seizures for five weeks by galvanocauterization of the inferior turbinated bone, but they recurred later. He has also succeeded in curing neuralgia of the first and second branches of the trigeminus and three cases of acute lumbago in men by treating the nose. In his experiments on animals, excitation of the superior laryngeal or of the first and second branches of the trigeminus nerve, augmented the blood pressure in the left auricle, with dyspnea. This corroborates the connection which has long been noted between asthma and affections of the nose.

Treatment of Typhoid Fever with Jez's Antityphoid Extract. V. Jez.—In the *Wiener Med. Wochenschrift* of Feb. 23, 1899, Jez first described his extract and reported 18 cases of typhoid fever treated with it. The experience of the last two years has completely confirmed his previous findings, and Eichhorst has also recently reported successful administration of it in 12 cases. The latter remarks: "The rapid improvement in the general condition was astonishing. I applied it only in extremely severe cases, and none of them died. In one case, defervescence occurred in seven days, and in the remainder, in four or five days after commencement of the treatment." The extract has no effect on any disease except typhoid fever. It is entirely harmless and can be administered in large doses, with no after-effects. It diminishes the temperature and strengthens the pulse, abbreviates the course of the disease, and diminishes or completely neutralizes the action of the typhoid toxins. It is administered by the mouth and consequently avoids all the inconveniences of subcutaneous injection. The Berne Serum Institute has undertaken its manufacture, which is not a secret process. Rabbits are immunized against the typhoid bacillus and killed the second or third day thereafter. The extract is derived from the organs, spleen, marrow, brain, medulla, spinal cord and thymus, in which the antitoxin is formed as has been demonstrated on man and animals. The extract is a limpid, reddish, alkaline fluid. A tablespoonful is given every one or two hours, and three tablespoonfuls a day after the morning temperature is reduced to 38 c., a total of 400 to 500 gm. in all. The fever shows the effect of the extract in twenty-four hours, and within forty-eight hours changes from continuous to intermittent and, finally, to apyrexia by the end of the second week. This effect on the fever is so constant that 100 gm. of the extract will prove a valuable differentiating measure. The sensorium becomes clear in twenty-four hours, and the patient is conscious, tranquil, and *free from pain of any kind, demonstrating that the effects of* the typhoid toxins have been neutralized by the antitoxins in the extract. These results, observed in fifty cases, impel Jez to recommend his extract in the most favorable terms. He appends detailed accounts of a typical case treated with it.

Klinitchesky Journal (Moscow), December.

The Eliminating Organs in Typhoid Fever. D. V. Nikitin.—The intoxication in typhoid fever is made up of the acute toxemia from the typhoid toxin, the chronic endogenous and exogenous toxemia which had previously existed in the patient, and the toxemia from disturbances in metabolism during the disease. The liver and skin are most active in the elimination of these toxins, but all the excreting organs in the body assist in the task more or less, and may substitute each other. *The diarrhea in typhoid fever can not be explained* exclusively by anatomic lesions in the intestines, but evidently plays a part in the elimination of the toxins. The vomiting also serves the same purpose. Intestinal hemorrhage in the beginning of the disease can not be considered as the consequence of a lesion, but rather as the result of the hyperemia of the intestines, and it serves to eliminate the toxins in the same way as lavage of the blood is applied in acute uremia. The rapid breathing may also be explained as increased functioning of the lungs—augmented ventilation to eliminate the volatile toxic products and increase the absorption of oxygen. The more intense the toxemia, the harder the eliminating organs work. When the latter are not equal to the task, from congenital or acquired weakness or degeneration of the organism, the disease is liable to terminate fatally. The duration of the disease in many cases is determined by the functional capacity of the eliminating organs. The course of typhoid fever, therefore, according to Nikitin's conception, does not depend on the virulence and other properties of the typhoid bacilli, but on the individual properties of the affected organism and on its equipment for the struggle for existence.

Vratch (St. Petersburg), December 29 and January 5.

Importance of Lowered Sensibility in the Causation of Infectious Diseases. A. K. Federolff.—Scientists have been unable to explain why the chemical products of the vital activity of pathogenic microbes in some cases attract, and in others repel the white corpuscles. Federolff believes that this varying chemotaxis is due to the physiologic condition of the phagocytes rather than to any special properties of the bacterial products. He attributes sensibility and psychic functions to the phagocytes, displayed in their purposeful movements, in their selection of food materials and in their aggressive seizure of the causal agents of infection. If they are benumbed or diseased, then the products elaborated by the bacteria or resulting from their dissolution, fail to incite the phagocytes to their normal aggressive activity. Tests of the effect of narcotic substances on the white corpuscles have demonstrated that their tactile and chemical sensibility are diminished by an anesthetic, exactly as the general sensibility is depressed and the reflexes are abolished by anesthesia. When, from any cause, the products of metabolism accumulate in the blood and lymph spaces; they probably exert a narcotizing influence on the cells and especially on the sensitive phagocytes. As the latter become benumbed and remain passive under this action, their physiologic faculty of producing the alexins—which some claim are bactericidal substances poured out into the blood plasma—is also reduced in proportion. The bacterial products may irritate the blood-producing organs, and so induce leucocytosis, but this is no criterion of the power of the organism to resist infection. The resistance depends on the physiologic condition of the leucocytes rather than on their numbers. In short, Federolff believes that depression from any cause may lead to accumulation of the products of metabolism. These in turn are liable to narcotize the cells—especially the phagocytes—check their functioning, assimilating, oxidations, etc. This allows the germs of infection to develop and elaborate their toxins, unhindered, entailing in consequence some infectious disease.

Queries and Minor Notes.

SECRETARIES OF EXAMINING BOARDS.

Jamestown, Tenn., Feb. 4, 1901.

To the Editor:—Please give the address of the secretaries of the State Board of Medical Examiners of California and Missouri.

M. H. L.

Ans.—The secretary of the State Board of Health of Missouri, by which licenses are issued, is L. C. McElwee, M.D., 1113 N. Grand Ave., St. Louis, Mo. The secretary of the California State Board of Examiners is Charles C. Wadsworth, M.D., 1104 Van Ness Ave., San Francisco.

PRACTICE IN CALIFORNIA.

Socorro, N. M., Feb. 2, 1901.

To the Editor:—Kindly give the requirements of the State Board of Health of California regulating the practice of medicine in that *state, also the name and address of the secretary of the* State Board of Health.

J. F. S.

Ans.—A diploma with affidavit, etc., from a recognized medical college, and a recommendation from some physician in good standing with the State Board of Medical Examiners are required. The secretary, whose address is given in the answer to the foregoing query, will furnish the needed application blanks on request.

PRACTICE IN OREGON AND WASHINGTON.

Lebanon, Kan., Feb. 1, 1901.

To the Editor:—Will you inform me as to the qualifications for the practice of medicine in Oregon and Washington? If an examination is required before a state board, please give their address.

W. C. B.

Ans.—The laws of Oregon and Washington are almost identical. In each state an examination is required and the candidate must, in his application, give full data as to studies, previous practice, etc., by affidavit. Fuller information, application blanks, etc., can be obtained from Byron E. Miller, M.D., Portland, Ore., or W. G. Tucker, M.D., Port Townsend, Wash., secretaries to their respective state boards of examiners.

PRACTICE IN ILLINOIS.

Pittsburg, Pa., Feb. 12, 1901.

To the Editor:—Would you kindly let me know through The Journal the requirements for practicing medicine and surgery in Illinois?

Subscriber.

Ans.—Application for license must be made in writing to the secretary of the board, Dr. J. A. Egan, Springfield, accompanied with proofs of good moral character and of graduation from a recognized medical college, and an examination must be taken. The examination fee of $10 must also be sent. If the application is satisfactory, the applicant will be notified when and where the examination will be held, and, on passing this, will receive his certificate.

EXEMPTION FROM EXAMINATIONS.

Greebville, S. C., Feb. 11, 1901.

To the Editor:—Would a medical college, a private institution, whose faculty are members of the state medical association, under whose appointment their state medical examining board was made, be considered reputable when they, by a majority vote, urged the legislature of their state to exempt their graduates from an examination by said board?

L. C. S.

Ans.—The action mentioned by our correspondent may be reputable enough from a purely *commercial point* of view, though we can not say that it would be in a professional sense. It is certainly against the best interests of the profession and of higher medical education. The Journal has already expressed its opinion in regard to this case and other similar ones. It was not, however, understood at that time that the faculty was advocating the exemption of their students from examinations. To the outside world it looks like a confession of inferiority on their part; that they are afraid to have their students take the examinations. The only other excuse it could have is that they wish to give additional inducements to attend their institution.

WORK ON PROSTITUTION.

Springfield, Ohio, Feb. 9, 1901.

To the Editor:—Can you suggest a work on prostitution, or any source of information in regard to whatever experiments have been made or are being made looking to its restriction or control.

W. B. P.

Ans.—The leading works on the subject are those of Acton and Sanger, the latter the most recent. The subject is a sociologic more than a medical one; the efforts for its restriction are constantly being made; those for its legal regulation or control have not been entirely successful. The matter has been discussed at length, over and over again, and was made the subject of discussion at one of the international congresses held last year, when considerable diversity of opinion was elicited.

New Patents.

Patents of interest to physicians, January 22 and 29:

666,375. Truss. Wm. R. Butler, Richmond, Va.
666,533. Purifying water. Jules H. Lavollay and G. E. Bourgoin, Paris, France.
666,534. Refining perfumes. Jules H. Lavollay and G. E. Bourgoin, Paris, France.
666,431. Electrotherapeutic apparatus. John S. Mead, Buffalo, N. Y.
666,627. Making picric acid. Max Neumann, Wittenberg, Germany.
666,636. Decomposing glycerids. Jonas W. Aylesworth, East Orange, N. J.
666,731. *Electromedical eyeglasses. Philibert Balme, Izieux,* France.
666,844. Sterilizing device. Frank C. Burgholz, Harrison, N. J.
667,144. Static electric machine. Charles H. Cook, Indianapolis, Ind.
667,127. Apparatus for feeding coagulants to liquids. Anthony Harris, Hunters Quay, Scotland.
666,676. Spirometer. Israel Hogeland, Chicago, Ill.
667,099. Treating and utilizing chlorin gas. Edward C. Paramore, Philadelphia, Pa.
667,100. Apparatus for treating chlorin gas. Edward C. Paramore, Philadelphia, Pa.
666,856. Retinoscope. Elmer L. Ryer, New York, N. Y.
666,703. Apparatus for congealing gelatin substances. Christoph Steilacher, Stuttgart, Germany.
33,998. Design, dispensing cabinet. Horace G. Stripe, New York, N. Y.

Copies of above patents may be obtained for 10 cents each by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

Change of Address.

W. A. Attaway, Nashville, Tenn., to 358 W. 36th St., New York City.
A. A. Ames, 54 3rd St., South, to City Hall, Minneapolis, Minn.
J. J. Ahern, 3851 State St., Chicago, Ill., to Cresco, Ia.
T. B. Busbee, Memphis, Tenn., to Goldthwaite, Tex.
J. W. Bethea, Des Moines, Ia., to Fernwood, Miss.
C. L. Bacon, 410 W. Main St., to 220½ Walnut St., Muncie, Ind.
O. E. Beebe, 227 Hermitage Ave, to 235 Ogden Ave., Chicago, Ill.
Marion Burke, 621 N. Cascade Ave., Colorado Springs, Colo., to 969 San Pasqual St., Pasadena, Cal.
C. S. Burns, Harrison, Ark., to Davis, I. T.
A. Caspe, 253 E. Broadway to 42 Rivington St., New York City.
Chas. Chapin, 1100 Tracy St., to 805 E. 14th St., Kansas City, Mo.
E. L. Clough, Oakdale, La., to Lake Charles, La.
J. J. Cavanaugh, Garland, Kan., to Arcadia, Kan.
J. R. Culbertson, Gray Court, S. C., to Washington, Ga.
C. Cushing, 1607 I St., Washington, D. C., to 696 Sutter St., San Francisco, Cal.
T. E. Chapman, Coats, Ark., to Wirth, Ark.
Geo. S. Darby, 653 to 651 Monroe St., Chicago, Ill.
A. T. Finch, Boydton, Va., to Chase City, Va.
A. T. Fisher, 2120 Vine St., to 2038 Cherry St., Philadelphia, Pa.
H. H. Fisher, Oil City, Pa., to 625 Kelly Ave., Wilkinsburg, Pa.
T. D. Farrer, 3001 to 3020 Lawton Ave., St. Louis, Mo.
M. W. Glasson, 701 S. Cherry St., to 632 S. College St., Nashville, Tenn.
L. C. Grady, 1100 Tracy Ave., to 805 E. 14th St., Kansas City, Mo.
T. A. Grace, Kansas City, Mo., to Orrick, Mo.
J. T. Greenwood, St. Louis, Mo., to Lone Star, Tex.
R. Graham, Seaton, Ill., to Biggsville, Ill.
J. H. Holbrook, Sulphur Bluff, Tex., to Mt. Vernon, Tex.
S. B. Hall, 913½ S. 13th St., to 1616 S. 10th St., Omaha, Neb.
O. F. Howe, Kansas City, Mo., to Medical College, Memphis, Tenn.
A. A. Heinemann, 94 Goethe St., to 56 Goethe St., Chicago, Ill.
G. T. Hunter, Hotel Granada, to 952 Bush St., San Francisco, Cal.
H. E. Jones, Hotel Racine, to 211 6th St., Racine, Wis.
W. B. Kern, Woodriver, Neb., to Hastings, Neb.
Adolfo Luria, 291 Division St., to 291 W. Division St., Station F, Chicago, Ill.
D. McCall, Memphis, Tenn., to Spotville, Ark.
T. A. McNicholl, 1919 7th St., to 221 W. 132d St., New York City.
Minda McLintock, Glenwood, Ia., to 2400 Dearborn St., Chicago, Ill.
J. J. Meany, 2107 W. Madison St., to 1770 Chicago Ave., Chicago, Ill.
J. G. McKinney, Quincy, Ill., to Barry, Ill.
H. S. Nelson, 54 3d St., South, to 1043 Andrus Building, Minneapolis, Minn.
H. H. Procter, Meharry Med. College, Nashville, Tenn., to Auburn, Ky.
E. H. Pomeroy, Calumet, Mich., to Oakwood, Lake Geneva, Wis.
D. J. Prather, 1165 Washington St., Oakland, Cal., to Bakersfield, Cal.
F. B. Romero, Las Vegas, N. M., to El Paso, Tex.
W. G. Rowe, 1834 E. 11th St., Kansas City, Mo., to Grain Valley, Mo.
L. L. Seaman, Hospital Ship *Maine*, Asiatic waters, to 18 W. 31st St., New York City.
Gustavus A. Sulzer, 4 Damarin Block, to 98 E. 2d St., Portsmouth, Ohio.
F. D. Stricker, 616 Elmwood Ave., to Grace Hospital, Detroit, Mich.
A. J. Sanders, Leeds, Ala., to Henry Ellen, Ala.
F. Tice, Omro, Wis., to 1044 W. Monroe St., Chicago, Ill.
J. P. Truax, Fort Casey, Wash., to Fort Flagler, Wash.
J. E. Trexler, Altman Building, to Commerce Building, Kansas City, Mo.
S. M. Taff, City Hospital, St. Louis, Mo., to Fayetteville, Ark.
C. C. Violett, Napoleon, Ky., to Lindsborg, Kan.
W. S. Wolfe, 3230 to 3301 Vista Ave., St. Louis, Mo.
H. Williamson, 270 Woodward Ave., to 52 Forest Ave., Detroit, Mich.
C. Wetherbee, 706 Woodward Ave., to 327 Brush St., Detroit, Mich.
L. G. Witherspoon, 909 W. North Ave., to 1002 W. Madison St., Chicago, Ill..

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Jan. 31 to Feb. 6, 1901, inclusive:

William Alden, acting asst.-surgeon, from the General Hospital, Presidio of San Francisco, Cal., to duty with troops en route to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

Guy G. Bailey, acting asst.-surgeon, leave of absence from the Department of California extended.

William P. Banta, acting asst.-surgeon, relieved from further duty in the Division of the Philippines and assigned to duty in the General Hospital, Presidio of San Francisco, Cal.

Henry D. Belt, acting asst.-surgeon, assigned to temporary duty at Fort Trumbull, Conn.

James Carroll, acting asst.-surgeon, from Columbia Barracks, Cuba, to Washington, D. C., for duty in the pathological laboratory of the Army Medical Museum.

William D. Crosby, captain and asst.-surgeon, U. S. A., member of a board in New York City to examine officers of the Corps of Engineers, for promotion.

Matthew A. DeLaney, acting asst.-surgeon, from the National Soldiers' Home, Va., to temporary duty at Fort Monroe, Va.

J. Ryan Devereux, acting asst.-surgeon, member of a promotion board at Washington, D. C., vice *Captain E. L. Munson*, asst.-surgeon, U. S. A., relieved.

Calvin De Witt, lieut.-col., deputy surgeon-general, U. S. A., leave of absence granted on account of sickness.

Joseph B. Girard, major and surgeon, U. S. A., leave of absence granted.

Albert Hartsuff, col., asst.-surgeon-general, U. S. A., retired from active *service, Feb. 4, 1901, by operation of law.*

Willis S. Horne, acting asst.-surgeon, from Marlin, Tex., to duty at San Antonio, Tex.

Henry S. Kilbourne, major and surgeon, U. S. A., member of a board in New York City, N. Y., to examine officers of the Corps of Engineers for promotion.

F. M. McCallum, acting asst.-surgeon, from Jefferson Barracks, *Mo., to Fort Reno, O. T.*, and return, on temporary duty.

James C. Merrill, major and surgeon. U. S. A., member of a board at the Army Medical Museum, Washington, D. C., to examine medical officers for promotion, temporarily relieving Col. A. A. Woodhull, asst.-surgeon-general, U. S. A.

John W. Ross, surgeon, U. S. N., retired, on duty under the War Department, is assigned to service in the Department of Cuba.

Edward A. Southall, acting asst.-surgeon, from the General Hospital, Presidio of San Francisco, Cal., to duty with troops en route to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

August von Clossman, acting asst.-surgeon, now in St. Louis, Mo., to report for duty as examiner of recruits in that city.

Joseph W. Walsh, acting asst.-surgeon, from Brooklyn, N. Y., to duty at the General Hospital, Washington Barracks, D. C.

Marshall W. Wood, major and surgeon, U. S. A., to take charge of the medical supply depot at St. Louis, Mo., during the temporary absence of Major J. B. Girard, surgeon U. S. A.

In addition to the above, the following named acting asst.-surgeons were directed, Feb. 1, 1901, to proceed from the places set opposite their names to San Francisco, Cal., for duty with troops en route to Manila, P. I., and for subsequent service in the Division of the Philippines: Polk D. Brown, Hartsville, Tenn.; Henry M. Hall, Cedartown, Ga.; Melville A. Hayes, Washington, D. C.; Edgar W. Miller, Chicago, Ill.; Frank W. Pease, Wahpeton, N. D.; Julius M. Purnell, Paris, Ky.; Anton R. Schier, Oconomowoc, Wis.

Boards to Examine Candidates for Admission Into the Medical Corps of the Army.—Special Orders No. 28, of Feb. 2, 1901, Headquarters of the Army, Adjutant-General's Office, Washington, D. C., provide for the organization of two boards on Monday, Feb. 11, 1901, at 10 o'clock a.m., or as soon thereafter as practicable, for the examination of candidates for admission to the Medical Corps of the Army. These boards will be governed in their proceedings by such instructions as may be communicated to them by the Surgeon-General of the Army. One is appointed to meet at the Army Medical Museum Building, Washington, D. C. It will consist of Col. Alfred A. Woodhull, asst.-surgeon-general, U. S. A.; Maj. Louis A. La Garde, surgeon, U. S. A.; Capt. William C. Borden.

asst.-surgeon, U. S. A., and Capt. Frank R. Keefer, asst.-surgeon, U. S. A. The other is directed to meet at the U. S. General Hospital, Presidio of San Francisco, Cal. Its membership consists of Lieut.-Col. Benjamin F. Pope, deputy surgeon-general, U. S. A.; Lieut.-Col. Alfred C. Girard, deputy surgeon-general, U. S. A.; Maj. Robert J. Gibson, surgeon, U. S. A., and Capt. William H. Wilson, asst.-surgeon, U. S. A.

Navy Changes.

Changes in the Medical Corps of the Navy for week ended Feb. 9, 1901:

P. A. Surgeon J. A. Guthrie, detached from the *Franklin* and ordered to the *New York*, February 18.

Surgeon A. M. D. McCormick, detached from the Naval Hospital, Norfolk, Va., and ordered to the Naval Academy, February 2.

P. A. Surgeon R. Spear, detached from the *Buffalo*, on arrival at Cavite, and ordered to the *Isla de Luzon*.

Asst.-Surgeon W. B. Grove, detached from the *Vermont* and ordered to the Naval Hospital, New York.

Asst.-Surgeon W. H. Bucher, detached from the Naval Hospital, New York, and ordered to Naval Hospital, Norfolk, Va.

Asst.-Surgeon M. V. Stone, detached from the *Isla de Luzon* and ordered to the *Buffalo*.

Medical Inspector E. Z. Derr, ordered to the Naval Academy, February 14.

Surgeon W. R. DuBose, detached from the Naval Academy, February 13, and ordered to the *Wisconsin*.

Medical Inspector D. M. Bertolette, ordered to the *New York*, February 16.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Feb. 7, 1901:

Surgeon Preston H. Bailhache, relieved from duty as chairman of the board for the physical examination of Second Asst.-Engineer R. F. Halpin, R. C. S., Feb. 4, 1901.

Surgeon G. T. Vaughan, detailed as chairman of the board for the physical examination of Second Asst.-Engineer R. F. Halpin, R. C. S., Feb. 4, 1901.

Asst.-Surgeon G. M. Corput, bureau order of January 26, directing Asst.-Surgeon Corput to proceed to Cleveland, Ohio, for temporary duty, revoked, Feb. 2, 1901.

Asst.-Surgeon Edward Francis, to proceed to Cleveland, Ohio, and assume temporary command of the service during the absence on leave of Surgeon Pettus, Feb. 2, 1901.

Acting Asst.-Surgeon J. C. Ballard, granted leave of absence for five days from February 7, Feb. 4, 1901.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 9, 1901:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, Jan. 26-Feb. 2, 1 case.

Illinois: Chicago, Jan. 26-Feb. 2, 4 cases, 1 death.

Kansas: Lawrence, Jan. 26-Feb. 2, 2 cases; Leavenworth, Jan. 1-31, 4 cases; Wichita, Jan. 26-Feb. 2, 22 cases.

Kentucky: Lexington, Jan. 26-Feb. 2, 2 cases.

Louisiana: New Orleans, Jan. 26-Feb. 2, 9 cases, 2 deaths.

Massachusetts: Lawrence, Jan. 26-Feb. 2, 2 cases.

Michigan: Grand Rapids, Jan. 26-Feb. 2, 1 case; Manistee, Jan. 26-Feb. 2, 4 cases.

Montana: Butte, Dec. 26-Jan. 20, 39 cases.

Nebraska: Omaha, Jan. 19-Feb. 2, 6 cases.

New Hampshire: Manchester, Jan. 26-Feb. 2, 32 cases.

New York: New York, Jan. 26-Feb. 2, 50 cases, 2 deaths; Utica, Jan. 19-29, 1 case.

North Dakota: Morton County, Jan. 30, 10 cases.

Ohio: Ashtabula, Jan. 26-Feb. 2, 2 cases; Cleveland, Jan. 26-Feb. 2, 49 cases, 3 deaths.

Pennsylvania: Allegheny City, Jan. 26-Feb. 2, 5 cases; Erie, Jan. 26-Feb. 2, 2 cases; Pittsburg, Jan. 26-Feb. 2, 8 cases.

South Carolina: Greenville, Jan. 26-Feb. 2, 1 death.

Tennessee: Jackson, Jan. 1-31, 20 cases, 2 deaths; Memphis, Jan. 26-Feb. 2, 18 cases; Nashville, Jan. 26-Feb. 2, 4 cases.

Texas: Galveston, Jan. 12-26, 37 cases.

Utah: Ogden, Jan. 1-31, 32 cases; Salt Lake City, Jan. 26-Feb. 2, 29 cases.

Wisconsin: Eau Claire, Jan. 22, 12 cases: Washington Township, Jan. 22, 20 cases; Green Bay, Jan. 26-Feb. 2, 1 case; Milwaukee, Jan. 26-Feb. 2, 2 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Jan. 5-12, 21 cases.

Belgium, Antwerp, Jan. 12-19, 3 cases.

Brazil: Rio de Janeiro, Dec. 1-15, 27 deaths.

England: Bradford, Jan. 23, 4 cases; Newcastle on Tyne, Jan. 12-19, 6 cases.

India: Calcutta, Dec. 15-29, 72 deaths; Karachi, Dec. 16-23, 5 cases.

Japan: Korea, Seoul, Dec. 22, many cases and deaths.

Russia: Moscow, Jan. 5-12, 2 cases, 1 death.

Scotland: Glasgow, Jan. 18-25, 324 cases, 3 deaths.

Spain: Barcelona, Nov. 25-Dec. 30, 71 deaths.

YELLOW FEVER.

Colombia: Cartagena, Jan. 8-13, 3 deaths.

Cuba: Cienfuegos, Feb. 1, 1 case; Havana, Jan. 22-29, 1 death.

CHOLERA.

India: Calcutta, Dec. 15-29, 87 deaths.

Straits Settlements: Singapore, Dec. 8-15, 25 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Jan. 12-19, 2 cases, 2 deaths.

PLAGUE—FOREIGN.

India: Calcutta, Dec. 15-29, 46 deaths.

Japan: Osaka, Dec. 22-Jan. 7, 3 cases; Wakayama, Dec. 22-Jan. 7, 1 case.

Turkey: Smyrna, Dec. 30-Jan. 6, 1 death.

THE JOURNAL OF THE
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MEMBERSHIP IN THE AMERICAN MEDICAL ASSOCIATION.

The qualifications for membership require that the applicant be a member, in good standing, of a state or local medical society entitled to send delegates to the annual meeting of the American Medical Association. A list of these societies will be sent on request. Applications must be accompanied with a certificate showing that the applicant is a member of a recognized society, and should be sent with the annual dues—five dollars—to the treasurer, Dr. Henry P. Newman, 100 Washington Street, Chicago. Members receive The Journal free. Subscribers to The Journal may become members of the Association without additional expense if they are members of medical societies recognized by the Association. Those desiring to have their names transferred from the subscription to the membership lists should send certificates as above, with a receipt for their subscription to The Journal, covering the current fiscal year.

FISCAL YEAR.

The fiscal year of the American Medical Association is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the Association at the annual meeting in June, for instance, pay only for the fiscal year which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time the treasurer sends a statement to each member. Such members, however, are entitled to The Journal for the full year, even though the membership be not continued.

PAPERS READ AT THE ANNUAL MEETING.

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NEWS.

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NUTRITION AND STIMULATION.*

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NEW YORK CITY.

"There has been a wave of enthusiasm affecting the profession for the past three decades, which has been growing stronger each year, and is now truly at its flood, and this wave has concerned itself chiefly with what has been termed scientific research. We are all now ready to announce our belief that the laboratory side of medical science must be cultivated as a foundation for the whole superstructure of more or less empirical clinical facts, and we have given evidence by the establishment of numerous institutions for study along these lines, and more will follow. More systematic and accurate methods are being applied throughout the entire field of medical practice than ever before, and every worker, whether wielding the microscope, manipulating cultures or making clinical observations and studying bedside symptoms, realizes the importance of thoroughness and the application of careful scientific methods."[1]

In passing it may be well to suggest that the term "scientific" has been used in too narrow a sense by many members of our guild. A recent writer very tersely says: "The use of the word 'scientific' in a narrow sense as applied to laboratory work, has done much to arouse prejudice and establish false standards. By degrees there has grown up a distinction, which is now heard on every hand, between what is termed 'scientific medicine' and 'practical medicine' naturally with the implication that practical medicine as personified in the practitioner is not scientific. In other words 'scientific' as popularly used in medical writing and discourse, demands a laboratory and the accessories which a laboratory implies, whereas the man who is examining his patients from day to day in most painstaking and accurate fashion is looked upon as a faithful and conscientious practitioner, but not as a scientific investigator. So deeply has the laboratory impressed itself upon the uncritical thought of the time, that he who often aimlessly looks through a microscope, or with narrow vision describes a lesion, is placed upon a pedestal as a man of 'scientific' tendencies, while his colleague who faithfully describes a symptom is denied any such distinction."

"The reason for this anomalous state of affairs is certainly not far to seek. It lies in the fact that accuracy and hence knowledge have, in great measure, come by way of the laboratory. The insistence on the necessity of exact observation and description has certainly not had its origin with any one set of investigators in the general field of medicine. The laboratory worker deals with problems of the most complex sort, and on the other hand with facts which may be easily and accurately described. His claim to distinction as a scientific man does not, however, lie in his description of isolated facts, but wholly upon his attitude toward the problems, the solution of which depends upon the proper interpretation of those facts. Certainly nothing is simpler than to go into a laboratory and to describe at any length what one sees under a microscope. This is, however, not science, however often the results may masquerade as such, nor does the mere accomplishment of such work constitute a scientific man. But to go into a laboratory, to study facts laboriously, and then to appreciate clearly the meaning of those facts for the sum total of knowledge and to make generalizations therefrom is, properly speaking, 'scientific.'"

Says the same writer: "We are safe in saying that all which is concerned with the acquisition of accurate and systematic knowledge of principles, by observation and deduction, is scientific. We must realize that a cell, as seen under a microscope, is no more an object of scientific investigation than a cough and a chill." Indeed, we must be imbued with the thought that the science of the sickroom, the science of life, its continuance, the securement of growth, the science of nutrition by which growth is accomplished, the securement and maintenance of a strong, robust, healthful physical and mental makeup and a useful, graceful old age, are all quite as important and worthy of our religious regard as laboratory results and deadhouse details.

Continuance of life, commencing with the original protoplasm, the cell, depends upon proper nourishment and a proper recognition of this fact, and attention to the means of securing this result is the duty of the physician. In other words, the physician should be interested in the child, from, and even before its conception.

May we not hope that the time will soon come when the physician will be the family counselor, and not alone be called to see individual members of the family when sick, but consulted prior to any important domestic movement, especially in advance of all matrimonial plans.

A reckless disregard of the physical equipment of either one or both parties in a matrimonial partnership can only result sorrowfully: "A child born weakly—of weakly parents, maybe—perhaps weds precociously a weakly wife or husband, 'produces weakly children, and they weaklier children,' of whom it may be emphatically said, 'better they had not been born,' 'for life is not to live, but to be well.' Without being actually ill, however, they are ever ailing, never healthy, never strong, sturdy, and active, as are many others; appetite is capricious, seldom good; food not taken with relish, hunger a sensation unknown to them; the poor, puny, pining things may be said to vegetate from day to day, instead of thrive and enjoy life; the pleasures of childhood are not theirs. 'A hale cobbler is a better man than an ailing king,' tersely and truly wrote somebody, 'for life consisteth not in the abundance that a man possesseth,' and compared with a good constitution, all the wealth of the world is nothing; yet how marvelously little do some, in their thirst for riches or position, 'appear to think this when sanctioning or encouraging ill-assorted or non-assorted marriages, regardless of physical and mental fitness, and that common sense should tell them can only result in disaster.' Were parents careful as to the companionships their children form, instead of anxious for them to ally with those of every wealthy *roue*, who bear about them the too manifest constitutional deterioration it is desirable to avoid, we should be less often shocked by the pitiable objects we sometimes encounter."

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* Address in Medicine to the Mississippi Valley Medical Association, Asheville, N. C., October, 1900.

1. Boston Medical and Surgical Journal.

2. Ibid.

If the physician could have a voice in the decision of these matrimonial schemes it would be well, but whether he has or not, he surely should be constantly on duty after marriage as the adviser and helper in the securement of a healthful and well-endowed heir.

We should insist, except in rare instances, that married life is a failure unless a child be born within a year, and we should encourage the thought that barrenness is acknowledgement of physical or moral delinquency, and in nearly every case is a reflection on the party of the second part as well as the party of the first.

Let us insist, that the future man will be a more complete and perfect specimen if we as physicians can be permitted to feed him or direct his feeding from the moment that he is conceived and starts on his life's career. Every mother or prospective mother should be taught that she is, from the time she reaches puberty, built and equipped for two, for herself and the child that from the beginning it was intended that she should bear and rear. And so, when bearing her child, the mother should be taught every detail of personal hygiene, proper feeding and elimination not only for her own sake, but for the health, life and perfection of the coming child.

Dr. Arthur W. Johnstone recently presented a most valuable paper, with the title "Auto-intoxication from Defective Menstruation," from the standpoint of nutrition, on the utility of the function of menstruation as providing a means of elimination for the surplus unused in child-bearing, demonstrating that many nervous symptoms of gynecologic subjects were due to retained excretions from defective menstruation, explaining many points of the pathologic features of puberty and the menopause.

The chief definite knowledge of proper infant feeding on the part of the medical profession has been the development of the past twenty years. There was no real check on the "slaughter of the innocents," the fearful, the awful infant mortality that obtained the world over until the problem of infant feeding was properly solved, and the first step in its solution was the appreciation of the fact that the substitute food for the babe must be sterilized, and the second was to know that sterilization means cleanliness rather than the destroying of micro-organisms in the food at the expense of killing the vital elements therein by cooking them to death; the third step was the recognition of the fact that infantile intestinal disturbances were almost uniformly caused by improper food and relief depended on the correction of the food-supply and the accomplishment of proper intestinal drainage—the removal from the bowels of the irritative materials. The pioneer work of Pasteur, Tyndall, Lister, and others was quite as important from a medical and dietetic standpoint as from the surgical one.

It is needless for me to draw attention to the essential elements of proper food. We are all familiar with the three general groups of elements or necessary food, which may be subdivided into: 1, the mineral—water, salt, ashes of plants and animals; 2, the carbonaceous or respiratory—heat-giving, starch, sugar, fat, etc.; 3, the nitrogenous—flesh-forming, tissue-building, such as albumin, fibrin, casein, etc. It stands to reason that throughout life the mineral and respiratory foods are necessary in full amount, but that when the individual has gained full maturity, complete growth, say after the age of 30, the nitrogenous or tissue-building foods are demanded in smaller quantity, and after 40, the middle mile-post of life, has been reached, less than one-half or even one-third as much animal food is required as during the period of development. This is not sufficiently appreciated, and the continued use of large quantities of nitrogenous food after maturity accounts for numerous diseases.

The investigations and views of Haig, Garrod and others are being daily confirmed by careful observers as to the close relation existing between the excessive use of animal food and gouty as well as organic diseases in general. Close study of numerous victims of the gouty diathesis, hereditary and acquired, has convinced most observers that the proper solution of the problems involved lies along the lines of judicious diet, which involves especially the reduction of animal food consumption and a more liberal use of fruits and vegetables. When we realize how close the relation is between gouty conditions, atheromatous degeneration, tuberculosis, cancer, general organic disease, premature age, and animal food in general, we will surely study the question most assiduously.

The liberal eating of fruit is a most excellent habit to form; it not only opposes constipation and favors the freest elimination in a general way, but the mineral salts contained in the fruit largely affect favorably the elimination of uric acid. The free eating of cherries, strawberries and grapes is an excellent fruit cure, and Weiss, acting on the recommendation of Woehler and Linnaeus, has recently made experiments which determine that quinic acid is probably the active ingredient present which acts as a curative agent in gouty states. A decoction of the root and leaves of the strawberry plant has long been a favorite domestic remedy in gout in some parts of Russia.

As a proper selection of the full varieties of food, and their complete digestion and proper assimilation, together with perfect elimination—in brief, a perfect scheme of metabolism—are essential to growth, so they are demanded after full growth is accomplished, in maintaining a healthful condition of the animal mechanism; but, as previously stated, the essentials for keeping up the equilibrium of metabolism in the latter period are different.

The scheme of metabolism includes assimilation or tissue-building, the power which the animal organism possesses of accumulating from its food supplies a store of potential energy, which is able to transform into kinetic energy and which commonly manifests itself in the form of muscular work and the production of heat, and finally the formation and elimination of excretory products which result from the changes which occur in the constituents of the tissues as the necessary accompaniments of such transformation of energy.

The balancing of the bodily income and expenditures is the essence of health. The real effect of food is to repair waste, administer to the growth of the bodily organs, maintain the balance of nutritive and temperature equilibrium under the varying conditions and circumstances to which the individual may be exposed, to maintain all the animal functions in complete activity and prevent loss of weight.

It is well that we exercise our intelligence in the selection of foods essential to health, to the proper running of our mechanisms, and remember that we eat to live and must not simply live to eat. In other words, after maturity there is grave danger to us in the cultivation of epicurean tastes, the love of the tickling of our palates.

It is not always safe to trust merely to the sensations of hunger, surely not to capricious choice or fanciful desires. We can not too strongly emphasize the thought that high livers are short livers. It is the part of wisdow for us all, then, to realize that as we approach maturity we must be satisfied to eat less and eliminate more, and that the greatest helper in the flushing of the eliminating organs is large quantities of pure water. Bodily exercise is absolutely essential to healthful activity of the eliminating organs, and unless we wish to be full, dull, heavy, luggy, and lazy as well as fair and fat at forty, we must keep moving and echo loudly the words of wisdom, "Blessed be drudgery." As an exercise walking will ever continue to be healthful and good. We as physicians fail in our duty when we do not announce in strongest terms not only the advantage from the standpoint of happiness, but also of longevity, of plain living and high thinking.

During this last decade we have added more definitely to our knowledge of the keystone in the arch of metabolism, the glandular system, than ever before, and during this period we have secured our first real knowledge of those glandular organs which had previously been considered as almost superfluous, the ductless glands, such as the thyroid and thymus. It would be most interesting to review the bearing of these glands on growth and health, both mental and physical, but time will not permit.

As we have studied food problems, we have had crowded on us more and more every day the necessity of state legislation in the matter of pure food laws. Correspondence with many thousand physicians during the past year elicited almost uniformly the view that legislation which will favor purity of food laws can not be too strict. Members of the medical profession of Missouri, almost to a man, have endorsed the legislation which precludes the sale of baking powders containing alum, an astringent which is certainly not favorable to good digestion, and other more comprehensive laws should follow. An investigation of the whole field of food adulteration presents facts which are almost appalling.

Some writers have placed under the head of medical or auxiliary foods those things which go to make up stimulants, neurotics and narcotics, such as alcohol, tea, coffee, tobacco, etc., but the expression, "auxiliary food," is of doubtful propriety. The term should surely be applied only to those things which are necessary to life.

ALCOHOL.

Among the so-called auxiliary foods alcohol is the only one which is open for discussion. Accepting as we may the views of Dujardin, Thompson, Pavy, Burney Yeo, Atwater and others in favor of the fact that when alcohol is ingested in the system in moderate quantities a part is utilized and only a part eliminated and it is therefore a food, it does not follow that it is essential to life. Many things may be oxidized and used in the body, and be a food to that degree, yet not be a desirable one. The evidence is constantly accumulating that, as a food, alcohol is of doubtful utility, and the list of valuable foods that are in no way involved in doubt, and certainly not harmful and dangerous to the body, mind and soul, is so great that alcohol as a food may well be left out of our nutritive philosophy and be permitted to take its place as a stimulant pure and simple. As a matter of fact, the dangers that are associated with alcohol are so great that it should only be classed under the head of medicines and luxuries. As a luxury, it certainly adds to the sum of human conviviality, cheerfulness and happiness when used in very moderate quantities, but then only with the meal. If used liberally it takes its place along with opium and Indian hemp, primarily as an exhilarant and secondarily a depressant and narcotic. A very limited amount of alcohol with the meal now and then does, to advantage, stimulate appetite and improve digestion, and by its psychic effect, making the user enjoy his food and environment, it may be helpful. The limited amount of good that it may do, in this way, in a few rare cases, is offset a thousand, yes, a million, fold by the awful dangers which accompany its use. The writer has for years had liberal views on this question, and while he believes that the proper solution of the temperance question lies in teaching every child from the beginning until matured to be the ruler of its own spirit, to cultivate self-denial, self-control, self-respect, yet more and more as time passes he believes that absolute avoidance of alcohol in all its forms as a beverage, as a luxury, is the safest course for all, and that while now and then a strong, self-reliant, rigid back-boned individual may with impunity take his occasional drink or liberal indulgence, the endorsement given to the drinking of alcohol by his act and the injury to his brother, whose keeper he surely is, however much he might wish to avoid his responsibility, is an unanswerable argument against him.

No one better than a physician knows the awful results to humanity, physical, mental and moral, of alcoholic indulgence. So that while being gently tolerant of the views of those not agreeing with me, I am strong in the conviction, after many years of study of the subject, viewed from the standpoint of experience and observation, that as a luxury alcohol should be ruled out of our lives.

While holding this view I but regret that many opponents of alcohol are so severe, intemperate and almost unkind in their discussion of the question. Is it not better for us all to make our appeal in a kindlier spirit of charity, to the judgment and intelligence of all concerned, presenting the argument that alcoholic indulgence is an injury to ourselves—a weakness, its excessive indulgence a vice, not a crime?

Alcohol as a medicine, a prompt and diffusible stimulant, has great value, but as each half decade of my experience has passed and I have taken stock of my knowledge I have been stronger in the view that in the majority of cases it can be dispensed with. In advanced stages of typhoid fever, pneumonia, tuberculosis and sepsis it certainly meets conditions admirably, and yet in many of these we can substitute hot milk, coffee, tea, strychnia, normal salt solution and other remedies to advantage.

Alcohol has been more abused, more excessively and needlessly used, more misapplied, than any other one remedy. The London *Lancet* recently quoted from the *New York Medical Journal* for Aug. 19, 1900, a case reported by Dr. M. A. Walker, of a boy of 6 years, who, before breakfast, about 8:30, drank 3 ounces of whisky. The parents knew nothing of this until about 9:30, when the boy, while sitting at the breakfast table, dropped a plate and then fell from his chair. At 10:15 he fell asleep on the floor, and his mother put him to bed thinking he would "sleep it off." There was no thought of serious consequences until 7:30 p.m., when the parents could not arouse him. At 7:45 he was comatose, the pupils were widely dilated and did not respond to light. The pulse was 145, small, weak, and compressible; the respirations were 40, easy, and quiet. The axillary temperature was 103.2 degrees. In spite of treatment—which was not described—circulation and respiration slowly failed. At 10:30 severe clonic convulsions occurred and lasted about ten minutes, and from this time there were almost constantly recurring localized spasms of the face and extremities, the left side being much more affected than the right. Cheyne-Stokes respiration began about 2:45 a.m., and death from cardiac failure occurred at 5 a.m. No means of stimulation seemed to have the slightest effect on the heart. The rectal temperature rose to 105.3 degrees just before death.

What physician who closely scans the details in this case does not recall the victims of typhoid fever, pneumonia and diphtheria, in the years gone by, who were similarly symptomed from alcoholic drenching? Let me urge one and all in the coming years to have a care in the administration of alcohol—it is as dangerous as a drug, as it is as a food.

Duty demands that physicians utter a note of warning against the use of alcohol in any form by women. Drinking on their part, whatever it may be abroad, is on the increase in America, particularly among the wealthy, the leisure class. The modern woman is not as busy in a domestic way as she once was. In many of the leading cities of America the free drinking of wine by very respectable women in public places is too common, and some of them now liberally indulge in the luxury of the cocktail and high-ball, and overwhelming evidence can be presented that the soda fountain is a popular rendezvous for fashionable female tipplers in some of our leading cities. This is an awful thing. It is bad enough for men to drink, but for women it is physical, mental and moral suicide. Their emotional make-up is such as to render the drinking of alcohol in any form deadly dangerous. At this point it can not be too strongly stated that a physician should only in the direst extremity administer alcohol to a woman; to a nursing mother, never. Too often beer, or some sloppy substitute masquerading in its place is given to the nursing mother to increase her flow of milk. It should never be done.

TEA, COFFEE, ETC.

Coffee, tea, cocoa and chocolate are all popular aromatic beverages which, while differing considerably from one another in their common physical characteristics, all agree in containing alkaloids closely resembling each other. Coffee and tea contain the active principles caffein and thein, practically identical, and the others contain an alkaloid of theobromin, which is very like them. Coffee is the more powerful and, on account of having much less tannin than tea, is not so constipating. Tea, being less potent, is a safer beverage if used liberally. Chocolate, as prepared from the cocoa of commerce, is very weak in the alkaloid theobromin; being very rich in cocoa-butter, made with milk as it usually is, it makes a most nutritious drink.

Coffee properly made is a great comforter to mankind, if not used to excess. It is truly "the cup that cheers but does not inebriate." It is a decided stimulant to the nervous system. Used intelligently it is a great conservator of energy, lessening the need for sleep after exertion, and removing the "tired feeling," and the best authorities claim that it has the power of augmenting the functional activity of the muscles, and a very stimulating effect on the heart, in small quantities quickening its action, in large quantities slowing it, while in excess it seriously disturbs its rhythm and regularity. If the digestion is above par, tea and coffee may be taken with meals, but if impaired they should be taken pure, without cream or sugar, an hour or two before meals. Coffee increases the secretion of the skin and the kidneys, and in the majority of cases it increases the flow of bile, peristalsis, and thus antagonizes constipation. This is more apt to be the result if it be taken as a pure infusion an hour or two before meals, on an empty stomach.

Tea and coffee, being stimulants, should not be given to children, on the principle that thoroughbred, spirited colts need no whip, but oats instead. Unquestionably the milder stimulants given to children during the growing period favor the appetite for stronger ones later.

It is well to remember that one good strong cup of coffee twice a day is ample for the average adult, and if taken in this way, if any exceptional demands be made on one's strength or endurance the additional cup of coffee will assist in meeting the emergency admirably. In the sick room, or for the victim of surgical shock, a good strong infusion of coffee by the mouth or the rectum, is in the majority of cases superior to alcohol.

TOBACCO.

Tobacco is a luxury which may very properly be classed, save in its dangerous features, with coffee and tea, but, like them both, it increases the power of resistance of the individual to fatigue and enables him to meet great tests of endurance and indulgence in prolonged abstinence from food. Tobacco differs from alcohol in every essential; the latter, whether we accept the idea that it is a food or not a food, can only be pronounced poisonous or dangerous so far as the individual dose is concerned when given in very large quantity, whereas tobacco in itself contains—no matter how small a portion—an active poison, a narcotic, which readily affects the brain. The secondary effects of *all* stimulants like alcohol and sedatives like tea and coffee are narcotic, but some, like tobacco, opium, henbane, etc., seem to immediately attack the centers of the brain.

The tobacco plant belongs to the genus Nicotiana, a name given to it in honor of Jean Nicot, a French ambassador at the court of Portugal, who first introduced this plant into France. Belonging to this genus are several species which yield at the present day the tobacco of commerce. These plants belong to the natural order Solanaceæ, a family which yields us not only tobacco but stramonium (Jamestown weed), belladonna (or deadly nightshade), henbane, cayenne pepper, tomatoes, ground cherries, potatoes and mandrakes.

A well-known writer has observed: "At first sight this looks like an incongruous family, but still there are certain common properties running through the whole order. All contain, more or less, substances that act on the nervous system, and thus increase from the mild poisons of the solanums till we arrive at the deadly principles of the atropas, the henbanes and the tobaccos. It seems well established that smoking was introduced from the new into the old world, yet in the latter there was ample material for its indulgence, for at least two species of Nicotiana, the N. rustica and N. persica, are indigenous to Asia. The American plant, the Nicotiana tabacum, has been one of the most cultivated, and Virginia, Kentucky, Maryland and Ohio are the states where it has been raised to the best advantage. Canada has produced some fairly good tobacco, South America sends its tobacco to Europe in large quantities, but for a long time the best in the world has come from Cuba. Our new possession, Manila, has furnished a high-grade specimen of great fame. From Persia has been brought the refined and delicate 'Shiraz tobacco' procured from Nicotiana persica, but the most aristocratic variety, Latakia, is produced in Turkey by the Nicotiana rustica. In Africa and Egypt the American species thrive. Algeria furnishes the chief supply of tobacco to France, and this explains the zeal of custom house officers at French ports in promptly confiscating the personal supply of cigars in the belongings of American globe-trotters. Germany, Holland and other European countries furnish a proportion of low-grade specimens.

Tobacco is used in three different ways, either chewed, smoked or in the form of snuff through the nasal passages. It would be interesting to discuss the details of the manufacture of tobacco, its proper treatment before being ready for chewing, smoking or snuffing, but in each case the effect is the same and the result depends on the absorption of the active principle, nicotin, and whether one snuffs, chews or smokes, unless he be possessed of a strong will power, he becomes more and more a slave to a narcotic but a step removed from those which are more alluring, such as opium, morphin and cocain.

In order to fully understand the effect of tobacco it is well to understand its constituent parts. In the analysis of a pound of tobacco, the fresh dried leaves, we have:

	Ounces.	Grains.
Nicotin	0	419
Concrete volatile oil	0	7
Chlorophyl	1	46
Gum	1	222
Starch	0	279
Albumin and gluten	0	349
Sugar	0	139
Salts	2	245
Water	1	402

In chewing tobacco about the only constituents which can exercise much influence on the system are the nicotin and volatile oil. The soluble salts would act the same as the saline constituents of the other plants and they explain why tobacco is such an exhausting crop for the soil. Among the salts of tobacco the nitrates are the most abundant, and this explains the ready way in which tobacco burns in the process of smoking. In snuffing, the soluble parts of the tobacco, as in chewing, are, after being dissolved, absorbed through the mucous membrane. In these latter days we understand that the intense vascularity of the nasal mucous membrane permits rapid absorption and the nicotin readily enters the circulation, the same as we have demonstrated that solutions of morphin do, and as thoughtless rhinologists have shown, in their temporizing and palliative treatment of nasal catarrh and hay-fever by means of the cocain spray.

In considering the chewing of tobacco from a medical standpoint we have to consider the nicotin absorbed through the buccal and pharyngeal mucous membranes and the small amount probably swallowed, together with the draught on the salivary glands and the waste of saliva. The chewing, viewed from a polite standpoint, unless absolutely in private, can not be considered other than in bad form. In the animal economy we have the secretory and excretory system of glands; the product of the former are essential to the proper performance of physiologic duty within the body and must be husbanded, and the latter are no longer needed and naturally seek the external world, but their proper disposal should be in private, away from the haunts of men, surely not in a way to offend the feelings of others or to make of one's self a public nuisance. So tobacco-spitting can not be excused under any circumstances from the polite standpoint, but the saliva is a secretion, not an excretion, and its free expectoration is a needless waste.

The use of tobacco by smoking is becoming more and more the almost exclusive way, and while in the earlier days the pipe was much in evidence, the cigar has almost crowded it out. It is interesting to study the history and preparation of tobacco and the manner of making cigars, but the main thing for us to recall is that while a good cigar, used very temperately two or three times a day, may be smoked by the average adult man to good advantage, excessive indulgence in smoking is very harmful. It is only necessary to recall one's first cigar and the profound effect it produced, to realize that the smoking of tobacco in large quantities is trifling with a dangerous agent.

In tobacco smoke we have the following: nicotin, empyreumatic oil, butyric acid, carbonic acid, ammonia, paraffin, empyreumatic resin, acetic acid, carbonic oxid, carburetted hydrogen and water.

The chief effects of smoking are from the nicotin and empyreumatic oil, the first being an active poison —an infinitesimal quantity will destroy life—and the latter, which is the rank accumulation in the stem of the pipe, is also a potent poison, one drop on the tongue of a cat having been fatal. The nicotin and the oil both act on the nervous system, though differently, the nicotin paralyzing the heart by its action on the brain, while the oil confines itself chiefly to the spinal cord and the motor nerves. It will thus be seen that no part of the victim's equipment escapes the deadly effect of tobacco in excess; as Lankester observes, "the nicotin seizes on the main citadel and the distilled oil attacks the outposts, and the whole man—body and mind—is brought under their influence."

1. Smoking in excess is more harmful than chewing, for the reason that the nervous system is not only more injuriously affected, but the catarrhal disturbances of the air-passages render the smoker more liable to dangerous and fatal diseases of the air-passages.

2. The excessive smoker is not only more liable to pneumonia, la grippe, tuberculosis, laryngeal and pulmonary, as the sensitive mucous surface and the bankrupted nervous system present a double invitation at all times, but fatal results are more apt to occur. Every case of laryngeal tuberculosis coming under my observation for several years has presented a history of the victim being a smoker, in the majority of instances to excess.

3. Heart failure is a frequent complication and serious with excessive smokers.

4. Cigarette smoking is worse than either the cigar or the pipe, but only for the reason that, the cigarettes being milder tobacco, the smoker almost universally inhales the tobacco fumes, and when we realize the component parts of tobacco smoke and how direct the routes from the air vesicles of the lungs into the blood current we can appreciate the ill effect.

5. Inveighing against the cigarette on the ground that the paper is poisonous and the tobacco drugged, mixed with opium, Indian hemp, etc., is all wrong, as the cigarette being a milder tobacco, perfectly pure, and the paper unobjectionable, if smoked without inhaling and in a temperate way, is to be preferred.

6. The cigarette smoker nearly always inhales the smoke and, becoming habituated to this quick toxic action, he will not smoke without inhaling whether he uses the cigarette, the cigar or the pipe, for the same reason that the morphin habitue accustomed to the hypodermic method will not be satisfied with the drug through the mouth; both victims want quick action.

7. Children who use tobacco before reaching maturity have their growth interrupted, as nothing more definitely interferes with the equilibrium of the tissue-building, digestion, assimilation, elimination, metabolism, than tobacco, and for these reasons its use favors gouty diseases, atheromatous degeneration, premature senility and decay. The excessive users of tobacco are crippled in their general equipment and are in no form to wrestle successfully with any disease.

8. He who smokes cigarettes to excess, or uses tobacco in any form to excess, is in danger of becoming an alcoholic, but in even greater danger of becoming a drugger, as tobacco is so closely allied to opium and Indian hemp. In a general way one excess invites another, as the will power becomes lessened.

9. Nothing is so apt to bankrupt the sexual equipment as tobacco, unless it be opium, as it stands to reason that a cerebrospinal paralyzant must obtund sexual desire and power.

10. The numerous mental wrecks, youths who have come under my care during the past ten years, whose lives were failures, or who fill suicides' graves, impress me that to-day tobacco stands as the gravest danger confronting the new century, and the medical profession has a fearful responsibility in educating young men and their parents to appreciate this danger.

The business world is, I am glad to see, undertaking the solution of the tobacco problem the same as it has that of alcohol, in that it is declining to employ cigarette fiends as well as moderate or excessive drinkers.

I am firm in the view that the medical profession must study calmly, tolerantly, temperately, the problems related to stimulants of all kinds, but tobacco and alcohol in particular, and they put themselves in best form for doing the best work along these lines and wielding their greatest influence for good, by themselves being exemplars of temperance, self-restraint, self-denial and correct living.

49 West Forty-fourth Street.

Zinc Oxid in Putty.—The French minister of public works has prohibited the use of white lead and ordered zinc oxid to be used in its place in putty, etc. This is the result of the efforts of Dr. Laborde, who has emphasized the injury from lead poisoning from this source, and proved that harmless zinc oxid is an efficient substitute for it in most of the various uses to which it is applied.

Original Articles.

THE RESULTS OF THE SURGICAL TREATMENT OF INFLAMMATION OF THE MASTOID PROCESS.*

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NEW YORK CITY.

The subject upon which I wish to speak has been so thoroughly considered during the past few years, it would be manifestly impossible for me to give more than my own personal experience in regard to it. What I wish particularly to emphasize, however, is the advisability of early operation in doubtful cases, and to show by my own statistics that the procedure itself is practically free from danger.

At the present time the general surgeon does not hesitate to open the abdominal cavity for diagnostic purposes. In the same way, I believe the otologist is perfectly justified in exploring the mastoid cells, whenever there is the slightest evidence of an inflammatory process. In the vast majority of cases, the signs are so well marked that a diagnosis can be easily made. In some, however, especially in those patients in whom the pneumatic cells of the mastoid are well developed, it is impossible to make an absolutely positive diagnosis until the disease has existed for several weeks, and sometimes for several months. When these cases are operated upon, the destruction which has taken place is invariably found to be extensive, and recovery is necessarily slow. Had operative interference been instituted when the first signs of the affection appeared—in other words, had an exploratory operation been done, the patient would have been relieved at a much earlier period, and a long and tedious convalescence would have been avoided.

So far as the operation itself goes, I am convinced that it is absolutely free from danger, if conducted in an aseptic manner. By this, I mean that the field of operation, the hands of the surgeon, the instruments employed, the sponges, ligatures, dressings, and, in fact, everything which is introduced into the wound, must be thoroughly aseptic. As much care must be taken in the preparation for such an operation as if the surgeon intended to enter the cranial cavity. The operator can never tell the extent of the disease in any given case, and not infrequently finds that there is an extension to the cranial cavity, in cases which have appeared comparatively simple.

The technique of the operation is too well known to require any description. I have only a few suggestions to make in regard to the method of operating. In the first place, the incision through the soft parts should be made as close to the ear as possible. If this is done, there will be no deformity after the operation; secondly, in every instance, I believe it wise to explore the entire pneumatic structure of the mastoid process, including the cells at the apex of the process. We often find the pneumatic spaces filled with granulation tissue or with pus, even when they are covered by a wall of apparently healthy bone. This is especially true of the cells at the tip of the mastoid. Another point is that, in every instance, the mastoid antrum should be entered, as a first step of the procedure. Even in cases where the cortex has been perforated spontaneously, I do not think it wise to begin the operation at this point. The mastoid antrum should always be entered in the usual manner. If this is done, the accidental exposure either of the meninges or of the lateral sinus will occur less frequently, while, at the same time, perfectly free drainage from the middle ear will be obtained.

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* Presented in a Symposium before the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Regarding the practice of closing a portion of the superficial wound with sutures, in order to render the recovery more rapid, my own experience has been that this procedure is scarcely advisable. Recovery is quite as rapid if the entire wound is treated by the open method, and any danger of pus retention is also completely avoided.

In 273 cases operated on, in not a single instance could death be attributed to the operation. Cases suffering from intracranial complications prior to the mastoid affection, are naturally excluded from this list. The simple point, however, which I wish to make is that the operation in itself is perfectly safe, and is a warrantable procedure as a diagnostic measure in doubtful cases.

TREATMENT OF CHRONIC OTORRHEA.[*]

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CHICAGO.

The subject of chronic tympanic suppuration is an important topic of aural surgery. The purpose of this paper, however, is not to introduce novel procedures for its relief, but rather to summarize our knowledge and endeavor to ascertain the crystallized sentiment of otological experience. For, be it remembered, unanimity by no means exists concerning relief measures for this troublesome and dangerous pathological condition, its treatment ranging all the way from the time-honored syringe to the radical mastoid operation. If concrete opinions concerning curative measures prevailed, no excuse would exist for this paper, but the discrepant views entertained by eminent authorities on both sides of the Atlantic furnish ample provocation for an endeavor to produce order from apparently chaotic conditions.

A professional classification according to expressed views might be designated as follows: The ultraconservatives, conservatives and radicals. 1. The ultraconservatives are those still possessing an abiding faith in the syringe, cleanliness, insufflations, drugs, mild surgical procedures such as polypus removals, etc., and who believe that all decided surgical measures, such as ossiculectomies and tympanal curettage, or worse, are not only unnecessary, but unwarrantably dangerous unless distinct mastoid symptoms are present. 2. The conservatives are those who give the previous treatment an opportunity of several months to effect a cure, failing in which, the tympanum is usually swept clear of pathological products. Many of them, but not all, regard a radical mastoid operation as a dernier ressort, not to be performed until all other means have failed, after persistent effort, and perhaps not then in the absence of mastoid symptoms. Other conservatives advise a radical operation more readily. 3. The radicals are those who waste no time over the preceding methods, but open the antrum, mastoid and tympanum as soon as chronicity is established. In this view they are supported by the opinion that the mastoid antrum is an actual anatomical extension of the tympanic attic and usually participates in chronic suppuration of the latter, and should be thoroughly opened and cleaned as soon as brief ordinary unavailing treatment has practically proved the existence of antral disease. They believe, therefore, that chronic otorrhea implies antrum involvement, perhaps induced by exuberant middle-ear granulations, which retain antral pus, unreachable and incurable by tympanal treatment or operation, and that such measures are mere placebos. They feel that necrosed bone in other parts of the body, even when exposed to view and readily subject to local treatment by acids in proper strengths, is treated by the skilful surgeon by radical surgical intervention, and not by tedious and unsatisfactory applications. They feel that the important and complicated structures of the middle ear should be treated upon the same general surgical principles, but with their importance much accentuated. They also believe that an effort should be made to save the ossicles in a fairly physiological condition, naturally impossible after ossiculectomy, and that the only probable method of accomplishing this is by the performance of the radical operation.

Among the ultraconservatives, according to their writings, may be classed Ole Bull, Manning, Dentovitch, and the late Samuel Sexton. Among the conservatives may be classed Shepherd, Black, Stucky, Buck, Gomperz, Burnett, Randall, Reinhard, Politzer, McBride, Lucae, Guye, Gradenigo, Eemann, Barr, Faraci, Buller, Cheatle, and White. Besides these Noyes is inclined to conservative views, while leaning somewhat toward ultraconservtism, with great faith in the "dry treatment" of chronic otorrhea. Dench and Vulpius, while still believing in a fair trial of conservative measures, are more and more impressed with the necessity for radical procedures, which they perform much more frequently and unhesitatingly than formerly. Dench shows a record of 64 per cent. of cures by the radical operation, as against 58 per cent. by ossiculectomy. Knapp expresses the same views, and believes that during the last few years the indications for intratympanic operations have steadily lost ground. He does very few of them, but has not utterly abandoned them. He thinks the indications for the radical operation are always strengthened in the presence of such constitutional diseases as tuberculosis, diabetes, syphilis, etc. Milligan has not abandoned conservative measures, but believes that twelve months of faithful treatment should be considered sufficient, after which, if the discharge continues, he would perform the radical operation. Among the radicals we find such names as Stacke, Schwartze, Macewen, Siebenmann, Jansen, Holmes, Alderton, Lane, and Gleason.

One noticeable feature of these lists is the evidence of surgical evolution and progress for, while such lists are, of course, numerically quite incomplete, their proportions and characters are unquestionably a fair representation of professional opinion. The time is fast disappearing when capable and conscientious surgeons are contented to indefinitely and dreamily subject such patients to interminable treatment, with the assurance that conditions are improving, and that a cure may some day be anticipated. Nor must this pessimism be construed into a lack of reasonable faith in ultraconservative measures. Much may be accomplished by antiseptic syringing, especially if effected by a good intratympanic syringe. Benefit unquestionably frequently follows what is known as the "dry treatment," peroxid of hydrogen, acids, iodin, enzymol, powder insufflations, gauze-drainage—which serves to keep the meatus sterile, cuts off the entrance of staphylococcus, and drains and asepticizes tympanal exudations—inflation, alcohol, granulation removals, and the numerous other suggestions for pursuing this plan of treatment. Procedures of this kind are undoubtedly frequently followed by satisfactory results, both as to discharge and hearing, but it is more than questionable whether it is justifiable to positively or negatively assume that our weapons for battle are thus limited, and whether patients should be permitted to continue the possessors of a disgusting and dangerous condition, owing to professional and mental inertia or a fatuitous faith in the direct therapeutical interposition of Divine Providence.

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[*] Presented in a Symposium before the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Some ultraconservatives reluctantly admit that the time may come, in the treatment of a case, when the boldness of an ossiculectomy may be indicated, but that momentous event is delayed to the very last moment of several years, hoping that at last persistent and varied efforts will finally be crowned with success. They believe that in the narrow confines of the tympanic cavity there is much room for mishaps and that an ossiculectomy being performed out of sight, and with great dependence upon the tactile sense, is fraught with much possible danger, and cite instances where the facial nerve, jugular vein and carotid artery have been injured and infection has developed along venous or other channels to the intracranial contents, with fatal results, especially where a granulation plug occludes a communicating opening between the brain and tympanum, forgetting apparently the lamentable end of many patients who have with their lives testified to the inefficiency of this line of treatment, persistently employed. The mere question of thoroughly cleansing an ear is by no means a simple one in chronic otorrhea. It is frequently surprising how mass after mass of foul material can be forced away by painstaking use of an ordinary syringe, supplemented by a tympanic syringe, peroxid of hydrogen, alcohol and inflation, and much time may be consumed before an ear may be considered even moderately clean. It will thus be seen how irksome these procedures must become to a busy surgeon, when daily repeated, especially when occurring in dispensary practice.

Concerning the use of the more or less popular "dry treatment," it is difficult to understand how even ordinary cleanliness can be obtained without the use of an intratympanic syringe, especially when used with peroxid of hydrogen, etc. The attic, where the trouble is usually most pronounced, is a complicated structure, containing the ossicles and many folds and sacs, well qualified to retain mucus, pus, desquamations, etc., difficult or impossible to dislodge by a cotton-tipped probe. If not dislodged, these foul products must remain the focus of disease. While, therefore, fully aware of the unfortunate effect of moisture in these cases, the writer is of the opinion that of the two evils, the lesser is the one which makes an effort at a thorough cleansing of the parts, until all detritus has been removed and all odor—due to saprophytes—has been dissipated. The parts may then be dried painstakingly with cotton, inflation, dry, and possibly hot, air, and the desired treatment applied. The names of those favoring the indefinite pursuance of this method are numerically small, and growing smaller each year.

The conservative ranks are numerically the strongest and contain those surgeons who have graduated from the ultraconservative column, but are not yet ready to say that a radical operation is always indicated in chronic otorrhea. There is considerable diversity of opinion among these surgeons upon several points. For instance, some believe that the patient should be given the benefit of perhaps a year's treatment before any operative procedures are undertaken, which operation should then be an ossiculectomy and curettage, to be followed possibly later by a radical operation, especially if mastoid or head symptoms supervene, if irrigation expels cheesy matter or mother-of-pearl flakes, if the discharge continues fetid in spite of persistent irrigation, if granulations recur when removed or cauterized, and if caries, especially of the posterior attic or meatus, is present. Others again cut down the treatment period to one or two months, to be then followed by the operative procedures just mentioned; while others, who are about ready to swell the radical columns, are willing to treat the case for about one month, when, if discharge continues, an ossiculectomy or possibly a radical operation is advised. In the event of the latter advice the ossicles may also be dealt with as seems best after a thorough post-aural examination. Upon one point there can scarcely be a divided opinion, namely, that the thorough performance of an ossiculectomy and curettage is a long step in advance and places the patient in a much more favorable condition for drainage and treatment than before, even if discharge does not cease, or recurs. The operation is attended with but little annoyance to the patient; tinnitus and vertigo are often much relieved; the thickened and functionless tympanic structures are removed; drainage is much improved; the tympanum can be much more readily reached for treatment; hearing is often benefited—for if ossicular continuity is severed by caries of the malleus and incus, or retarded by pathological middle-ear products, such as exuberant granulations, cholesteatoma, etc., sound waves can not reach the labyrinth even with reasonable ease, and hearing is naturally affected—and all conditions are bettered even if a cure is not effected, which, if we are to believe the statement of many competent observers, is not by any means an event of rare occurrence.

It must also be remembered that even after the patient has been induced to undergo a radical operation we sometimes find during the operation that no especial disease existed in the antrum or cells, and that the operation has hardly been essential, and a regret must be felt by a conscientious surgeon, that more persistence in conservative treatment had not been exercised.[1] This is emphasized by the reflection that even the radical operation is not always followed by a complete cure of the discharge (although some surgeons feel they can assure their patients a safe and sure result), which it appears should somewhat restrain enthusiasm for its universal performance. It should not be forgotten, however, that most serious and deep-seated pathological conditions are sometimes found in the course of a radical operation or at a post-mortem, when subjective and objective symptoms have been of the very slightest character.

The personal equation of surgeons should also be considered in the advisability of the advocacy of the frequent performance of the radical operation. This operation is by no means a simple one. There is probably no space of equal size in the body surrounded by so many dangerous elements as the space involved in the tympano-mastoid procedure. It is hazardous ground for the novice or for him who is not thoroughly grounded in the topography and surgical anatomy and abnormalities of the parts. Again, all operators are not equally skilful, and an operation that might be reasonably safe in the hands of a Stacke or a Macewen, might be exceedingly dangerous when performed by some other aurist, who, while inexperienced, might be unwilling to admit it, and who might feel that he must follow in the steps of the master, even if his services are supplemented by those of the undertaker. It certainly requires conviction and courage to advise a radical operation in the absence of mastoid symptoms, especially in the early stages of a chronic discharge. So many people are unquestionably cured of such a discharge without an operation that patients who become familiar with this fact must indeed have supreme faith in their surgical adviser when they mount the operating-table under these circumstances, and it must be admitted that a consequent facial paralysis, impaired hearing, protracted healing, continued discharge, fistula or death, can not serve to exalt the professional position of the operator in the minds of the laity, the profession or even himself. Of course, the complexion of the case absolutely changes in the presence of long-continued discharge unchecked by persistent conservative procedures, cholesteatoma or of mastoid or intracranial symptoms, under which circumstances the patient himself frequently demands radical relief. But in the absence of such indications, no surgeon should be blamed for the advocacy of conservative measures, especially when it is remembered that a cessation of the discharge and improvement of hearing frequently follow ossiculectomy and curettage. These illy defined and insidious forms of chronic otorrhea with antrum or cell infection, but unaccompanied by palpable symptoms of such extensions, are certainly difficult ones in which to decide upon a plan of action unless one happens to be a radical in his opinions. The gravity of the situation may not be always measured by the quantity, quality or odor of the discharge, although these indications often mean much, but certain ill-defined symptoms, such as a slight rise in temperature, irritability, nervous exaltation, mental depression and general appearance of parts, are not without their significance.

Concerning the radical operation, it may be confidently stated that he must be very conservative indeed who denies the advisability of such a step in the presence of mastoid or intracranial symptoms, or of distinct organized cholesteatomatous masses. And there are many eminent surgeons who would not advise a radical operation in long-continued and intractable discharge without the above history, but there are at present comparatively few who are willing to go on record as advising such an operation as soon as chronicity of the discharge is established, say in a few weeks after the inception of the discharge. And yet we must not forget the eminence of authority on this side of the argument, nor fail to lay much stress upon their plainly spoken opinions. Most of the radicals are our teachers, men to whom we look for advanced and correct thought, and their sentiments can not and should not be turned lightly aside and dismissed as too extreme. It may be that their very eminence and skill in operating, however, has much to do with their results and consequent views, and the question may be most justly raised whether inferior but ambitious operators are warranted in following their leadings. Stacke, for instance, believes that ossiculectomy without the radical operation is a mistake, as it destroys ossicular aids to hearing. He advocates the radical operation as soon as the discharge becomes chronic, hoping thereby to save the ossicles and the function of audition. He says the ossicles can be removed later if necessary. Siebenmann, Jansen and Scheibe endorse these views, and the latter claims that in any case of otorrhea, if the odor is not removed by intratympanic syringing, the radical operation should at once be performed. Macewen lays down this axiom: "When a pyogenic lesion exists in the middle ear or in its adnexa, which is either not accessible or which can not be effectually eradicated through the external ear, the mastoid antrum and cells ought to be opened." This statement is in reality not so bold as would at first appear, for most surgeons would concede the advisability of a thorough exposure of the parts were they positively assured of pyogenic extension beyond the tympanic area. But such positive assurance is not always apparent, and in the dimness of an uncertain diagnosis hesitation is natural. It is like appendicitis; if suppuration could be positively located in the appendix no one would fear to operate, but in the absence of such an assurance surgeons frequently wait, fortified by the long list of recoveries without operation. Not many doubt the advantages of a successfully performed radical operation when the parts are thoroughly exposed to view and their complete inspection possible. Investigations may then be pursued in all directions, pathological conditions removed, pyogenic extensions prevented, asepsis secured, and a logical expectation of a cure entertained. Macewen claims that pathological middle-ear products can be removed not only easier, but safer by the mastoid than by the meatus route. He feels that in chronic otorrhea the tympanum is septic, and that operative procedures in this area expose fresh surfaces to pyogenic influences and simply court disaster. Such views are undoubtedly enveloped in much truth, but surely the radical operation itself is not utterly devoid of danger, and a properly performed ossiculectomy is most infrequently followed by a fatal or unfortunate result.

It will thus be seen that there exists considerable apparent diversity of opinions concerning the treatment of chronic otorrhea, and it would appear that much misunderstanding could be averted if conditions rather than a name might be considered. Some surgeons believe that cases of chronic otorrhea do very well under such and such treatment. Others believe that ossiculectomy and curettage are indicated, and still others that a radical operation must be performed. The old Oriental story is recalled of the three blind men who went one day to inspect an elephant. "He is like a spear," said one who *grasped the tusk*. "He is like a fan," said another who felt of his ear, while the third, with his hand on his leg, declared he was like a tree. They had all inspected the elephant, but naturally formed different ideas of his appearance. So it is with chronic otorrhea. Various observers form various views from various experiences, while if all would carefully inspect each case and judge of its treatment on its own individuality it would be seen that there is ample room for all opinions in considering this interesting subject and its treatment. A chronically discharging ear does not always indicate the same pathological conditions. A simple exudative mucous-membrane inflammation may exist, with imperfect drainage, which may be healed by an enlarged opening and simple treatment. Or exuberant granulations may be present, which are removable and curable. Or ossicular or mural caries may occur, relievable by acids, drainage, treatment, etc., or an ossiculectomy and curettage. Or the disease may have extended farther into the antrum, and even here it is not inconceivable that a removal of intratympanic contents, supplemented by good drainage and proper treatment, may effect a cure, although it is admitted that the radical operation will usually be indicated. Or the mastoid antrum and cells may be involved and possibly the sinuses and intracranial contents, calling for prompt and large operative procedures. So instead of assuming that chronic otorrhea must always be treated upon certain clearly cut principles, it would be better to examine each case independently as to its pathological condition, symptoms, duration and character of its discharge, etc., and advise a plan of action harmonious with such unprejudiced examinations and observations.

The dividing pathological line seems to be the extension of the disease to the antrum. Before this occurs tympanic treatment and operations should prove sufficient, although, as has been before stated, Stacke and other eminent authorities believe that when a chronic discharge is established a post-aural operation should unhesitatingly be done, with the hope of preserving the ossicles and good audition. It is scarcely believed, however, that the profession is yet ready to accept these ultraradical views, especially when the danger of the radical operation in all hands is considered, and the very good hearing frequently obtained, even when the tympanum is swept clear of its contents. After the antrum is clearly involved most competent observers will agree as to the indications for post-aural operations, while even here many capable men wait for mastoid and other significant symptoms, although the supporters of this view are steadily growing less.

How then may we determine the existence of antral disease in a case without significant symptoms? It is impossible to answer this question definitely, there being no fixed rules by which to ascertain such extension in quiescent cases, and an opinion must be accumulated by composite observation, which is nevertheless reasonably trustworthy. Aural discharge, especially if persistently foul and profuse, continuing in spite of proper local treatment for a period say of three months, is a decidedly suspicious condition, particularly when accompanied by recurrent and persistent exuberant granulations and necrosis. Especially is this true if the membranal opening has been in Shrapnell's membrane, or in the posterior superior quadrant of the main membrane, and if carious bone can be located in the upper and posterior wall of the tympanic cavity, or if the upper and posterior walls of the deep meatus are red, bulging or sensitive. These observations are much strengthened if the discharge is cheesy or flaky or contains the streptococcus, influenza or tubercle bacilli, and if the tympanum has been cleared by an ossiculectomy and curettage. A case presenting such a picture, or even a reasonable portion of it, even if absolutely unaccompanied by mastoid or other significant symptoms, would certainly lead most progressive surgeons to unhesitatingly advise either an ossiculectomy or a radical operation.

It is impossible to deny that the trend of high professional opinion at the present time turns toward the latter view. Perhaps this is inevitable and proper, but let us not advance too hastily. Let us rather err in the direction of conservatism, feeling that important and complicated operations will be the natural evolution of added knowledge.

92 State St.

Medical students in the German universities this winter show a considerable decrease in numbers. Last year there were 7543 in attendance, but at present only 7113.

BONY DEFECTS AND FISTULÆ IN THE EXTERNAL MEATUS.*

H. GRADLE, M.D.

CHICAGO.

The occurrence of artificial communicating passages between the meatus and attic of the middle ear is, on the whole, little referred to in literature; it is mentioned, but not commented upon, in some of the larger text-books. Some illustrations of it are given in Politzer's "Beleuchtungsbilder des Trommelfells," etc. Yet it is not a rare lesion, as I have seen considerably over 20 instances, and can refer now to some 20 complete records. The last 12 cases were found amongst 2000 ear patients. The defect is usually a fissure of variable size in the external wall of the attic, opening through the upper wall of the meatus above Shrapnell's membrane. In some instances it seemed to be a fistula instead of a complete gap, but it is not always possible to distinguish between two conditions.

Small defects are difficult to recognize by sight and may be found only by the use of the probe. The end in the meatus is often narrower than the opening into the attic, which is in rare instances exposed to partial view. The membrana tympani was totally gone, or nearly so, in a few of the cases. In most of them the tense portion of the drumhead was intact and the perforation limited to Shrapnell's membrane.

Most of the patients were seen on account of the discharge. Several, however, had no secretion at the time of the examination, merely asking help for their hearing. As in all forms of purulent otitis, the hearing in a given case may be very little or very much damaged.

The patients were all adults, who dated their ear-trouble back to childhood. No case was observed from the beginning. The origin of the gap in the bone must, of course, be attributed to caries, but no evidence of its continuance was found in most of my patients.

The existence of a fistula into the attic does not add to the gravity of a chronic case. In consideration that these were all cases of disease of the attic, their course may even be said to have been relatively mild, perhaps on account of better drainage. One time only were distressing symptoms—vertigo and headache—observed during a subacute exacerbation. Of 20 patients, 19 were cured without any operation, some being observed many months, others several years. Even the one patient not cured under treatment claimed to have lost the discharge by treating himself according to directions while on business travels; but this is only hearsay evidence. A cure for the time being was admitted only, if on repeated trials no trace of discharge could be found on exploring with a cotton mop, or on searching for it in the pus basin after syringing the ear. Relapse, however, must be expected in some of these cases, and indeed about one-third of them did return, sometimes repeatedly—after intervals of months or years. The relapses were as easily checked as the previously continuous disease.

A frequent cause of relapse is desquamation of the epidermis, which had grown through the fissure into the attic. Cholesteatomatous contents were found in six patients, often in the form of concretions, which could be picked out in a single mass. This process of desquamation continues after suppuration is arrested. Several patients have returned once in 1 to 3 years, presenting again the concretion in the attic, but without symptoms or odor. In none of the cases was there any reason to suspect that the desquamative process extended beyond the attic.

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Relapses occurred also in a few who had no cholesteatoma. Under the head of relapse I do not include recurrence of secretion within a few days after apparent cure. This is quite common, and the observation should not cease until the ear has been dry a few weeks. The reasons for real relapses after months or years of apparent cure are not entirely clear—apart from cholesteatoma. Caries no doubt complicates a large proportion of all cases of attic suppuration, much more often than can be detected by the probe. The occurrence itself of a hole in the bone is proof that there was caries originally, though not necessarily present at the time of examination. But, contrary to views occasionally found in literature, caries does not prevent permanent recovery as long only as the pus is in no way pent up. Both among these patients with bony perforations, as well as among others without this complication, I have on record many permanent cures, in spite of existing caries, confirmed by re-examination after years. As long, however, as the foul odor of the discharge shows interference with free drainage, recovery is out of question. On the other hand, necrosis of bone with the presence of a sequestrum is an absolute barrier to the cessation of the discharge.

The treatment of chronic otitic suppuration is not altered by the existence of bony defects, perhaps even facilitated. The all-important condition is the complete removal of all pent-up discharge, as well as cholesteatomatous masses. Granulations need to be curetted only if they interfere with drainage. An infallible guide for controlling the efficacy of the treatment is the odor of the discharge. A fetid smell shows pus-retention, even if it be only on a microscopic scale. As long as this exists no complete cure is possible, while the removal of the odor is proof positive that the conditions are now favorable for cicatrization. Formerly, after mechanical cleansing by the syringe, a fine intratympanic canula and the curette if needed, I depended mainly on insufflation of boric acid, varied sometimes with instillation of alcohol-ether solutions of iodoform and carbolated glycerin.

After many years of use of this method in chronic otitic suppuration in general, I am still satisfied with its efficacy and promptness, provided it succeeds within a few days at the most in completely conquering the odor. The continuance of this treatment is, however, absolutely useless if the odor does not yield. A potent additional measure was suggested, first, I believe, by N. Pierce, about three years ago. It is capillary drainage by a gauze drain. A peculiarity of this method, which has not been pointed out before, is that it will gradually remove the odor in eight to fifteen days, while lessening the discharge. Intratympanic syringing and the use of the curette followed by boric acid powder either deodorize in a few days or fail altogether. Gauze drainage, on the other hand, may not change the smell until the discharge has nearly stopped. While in the cases now under discussion at least a temporary, and mostly a permanent, cure was obtained by these different methods in all but one doubtful instance, even the drainage method will, of course, fail at times in chronic otitis. When the attic is obstructed by adhesions around the carious ossicles, nothing but ossiculectomy, and when the antrum has carious walls or cholesteatomatous contents nothing but radical operation can cure the disease. The drainage method, however, limits the indication for these surgical measures. Only I am not yet assured regarding the permanency of cure by gauze drainage.

Capillary drainage is effective only if the absorbing material is almost in contact with the secreting focus. I can suggest an improvement on gauze strips, as they often cause pain when pushed in with the probe. For some months I have used strips of sterile blotting paper, about 0.5 millimeter wide and 20 long. They absorb more energetically than any gauze. As additional aseptic precaution I have powdered them freely with boric acid. They can be inserted through the speculum with scarcely any discomfort, and made to touch the drumhead or exposed internal wall of the middle ear. The auricle is then packed with gauze powdered with a mixture of boric and salicylic acids.

DISCUSSION ON PAPERS OF DRS. KNAPP, RICHARDSON, CALHOUN, DENCH, ALLPORT AND GRADLE.*

DR. W. K. SIMPSON—One thing interesting to me was in Dr. Allport's paper, as to what should be done in cases of chronic suppurative disease of the middle ear, as to whether we should treat it or whether we should be radical, and the question arises: why are some men radical? If we will study some of the cases Makuen reports, we will see why he is radical. When we consider some of the cases that come to him that have been left to God Almighty and the syringe, and badly neglected, it is no wonder that Makuen and such men are radical. It is proper for the essayist to dwell upon this matter, but it is a question that we must decide for ourselves. The treatment of intracranial affections recalls to us, who went into the study of medicine about the time appendicitis was discovered, a parallel of that disease. The large number of patients who formerly died of "inflammation of the bowels" we now know died of appendicitis. And so now we know that many who formerly died of "brain fever" died of disease of the middle ear. "Brain fever," like "inflammation of the bowel," covered a multitude of evils. The difficulty of diagnosing intracranial lesions in children has interested me very much. I have accumulated a few cases with the specimens. This one it seems to me is dependent on, in the first place, anatomic elements, and in the next on physiologic elements. The cerebral centers are not thoroughly established, and I am satisfied that if we wait in a child, to make the diagnosis, until we can make one of these feather diagnoses we read about in the text-books, we will not make one in time to save the child's life. The diagnosis in most instances has been made by what we might call main strength and awkwardness. [Laughter.] Perhaps I had better illustrate what I mean. We know that one case does not prove very much, but it takes a good many things in inductive reasoning to prove anything. The case was one of a child 3 years of age, in which the doctor called me and said the child seemed to have typhoid fever, but did not have the typical typhoid temperature. The child had not spoken for two weeks. The pupils showed nothing, physical examination showed nothing, and there was nothing to localize the trouble. But there had been a discharge from the ear for some months. I reasoned that here is a child that probably will die soon if nothing is done. I believed that there was present a suppurative otitis media and the chances were that the temporosphenoidal lobe was involved. I knew that I could not wait, so I operated at once without an anesthetic and the child got well.

DR. O. JOACHIM, New Orleans, La.—I desire to present for inspection a specimen obtained from a patient I operated on. When he came under observation he was delirious, unable to answer any questions and presented all the symptoms of intense pyemia from purulent lateral sinus thrombosis of otitic origin. I operated promptly and found extensive alterations. There were perisinual and epidural abscess and other extensive disease areas. The jugular vein was tied and the sinus was flushed both from above and below. The patient did badly. He lived twelve days. The post-mortem examination made at that time showed, beside other changes, numerous metastatic processes in the lung, perhaps one hundred abscesses in one lung and about thirty in the other. The condition was an extreme one from the beginning and admitted of very little hope. The specimen here speaks for itself. It presents some necrotic spots on the superior surface of its petrous portion which could not easily be removed by operation.

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* The papers of Drs. Richardson, Knapp and Calhoun were published in THE JOURNAL of February 23.

There is another case I operated on immediately after this one that presented a few points of unusual interest, and as there are many oculists here, I wish to recite one of them. It was an acute condition. I saw the patient after the first chill; he walked into the hospital. We operated the second day. After operation there was an immediate fall of temperature. We had all the symptoms of pyemia due to sinus thrombosis. We operated and cleaned the involved areas, tied and flushed the jugular. The patient made a quick and prompt recovery. He developed facial paralysis, which was probably due to the operation. Before the operation he complained of double vision, which persisted for three weeks after it. By degrees he developed a complete bilateral abducens paralysis; with this appeared central blindness affecting both eyes. The oculist reports that there is some vision left, but not enough to admit of a useful occupation. The connection between the eye and ear trouble is interesting, and it is important to elicit their cause.

Dr. Kirkendorf—I have a patient on whom I did the radical operation for mastoiditis. He did well for fourteen days, at the end of which time he developed paralysis of the abducens. On the following Wednesday he complained of double vision. I examined the fundus and found it perfectly normal. The only trouble I could see was that the external rectus was paralyzed on the side on which I operated. On the following day I did a secondary operation to make sure my primary one was all right. I secured thorough drainage from the antrum and attic, and, not finding any trouble there that would account for the disturbance, I followed up the lateral sinus and, finding no accumulations in this, stopped my work there, then trephined an inch above the external auditory meatus and took out a piece about an inch in circumference and found the dura mater more or less granulated. Pulsation was marked. I suspected an abscess of some kind in the middle fossa or deep-seated, but the physicians who were with me felt intent on further operative procedures, and so I introduced a needle in various directions, but was unable to find any pus. I then desisted and packed with iodoform gauze, and the next morning the patient was free from septic trouble. There had been a temperature of 103 degrees before I operated the second time, but the next day the temperature was normal and there was no diplopia. Later he had diplopia. Vision was then normal.

Dr. G. L. Richards, Fall River, Mass.—I have two cases to report in connection with the papers of Dr. Allport and Dr. Richardson. One was a case of otitis media with brain abscess. The patient had his hair cut two weeks before the operation. He had an apparently slight otitis media suppurativa, for which he entered the hospital and was finally discharged improved. On his way home he lost his way in a swamp, was searched for and returned to the hospital with a total paresis of the left side, a dilated pupil of the right side, and totally unconscious. He was operated on by me, and almost total destruction of the right lobe was found. Death resulted three days later. The question arises: how long should we wait in these cases? Twenty-four hours before operation this man gave no evidence that he was in this tremendously perilous condition. It only reminds us that every case of otitis media suppurativa is grave until it is well.

The second case was a sea captain who had an otitis media suppurativa. When I saw him there was some mastoid tenderness and I requested permission to operate as soon as I could get the instruments together. I was not allowed to operate until forty-eight hours later, when I did it as thoroughly as I felt warranted in doing. The patient got along well until pain and swelling appeared along the muscle on the opposite side. This I attributed to the operation. After that the patient came under the observation of another man. He was later operated on for multiple abscesses on the back of the neck. It seems that he was developing a moderate, slow degree of septicemia, which broke out on the opposite side, and the forty-eight hours' delay had something to do with that. General constitutional infection may take place simultaneously with the breaking down of an abscess.

Dr. Taylor—I would like to mention a case in connection with the class mentioned by Dr. Calhoun. For a long time I did not believe it possible that we could have mastoid inflammation without suppurative inflammation of the middle ear. But a year ago last April a child was brought to me that had no ear trouble, so far as the parents or the family physician knew, and yet that child had well developed mastoid disease. The ears were standing out and it was very evident that there was pus present. I did what I supposed to be a radical mastoid operation, removing everything until we came to solid bone in every direction. The child recovered promptly and well, but one year later, in April, 1900, without any ear symptoms, without any pain whatever or anything to indicate that there was trouble there, the same trouble slowly developed on the same side. At the time the patient was not living in the town where I was, but was away on a visit, and was brought home to me. I operated the next day, removing everything possible, and I even went through the skull, so that there was no possibility, I thought, for any return of the trouble. The patient recovered very nicely. The child was in a very much run-down condition and we gave cod-liver oil internally, and it was brought down to Atlantic City to recuperate. When it left home there was a slight enlargement of the glands below the ear. The child was brought back about the middle of May with the same trouble well developed in the other ear. A radical mastoid operation was performed on this ear. This is a case in which mastoid disease developed on both sides without any indication whatever of ear trouble. I saw the child the day before performing this operation, and I examined the ear thoroughly without finding any bulging of the membrane or any indication of middle ear disease.

Dr. B. Alexander Randall, Philadelphia—*Apropos* of the Doctor's case, the only one I had the honor of treating with Dr. Calhoun was a patient in whom there was no apparent tympanic involvement at the time the operation was done. It was one of the cases that later required a second operation. I am glad the discussion has taken the form it has, and I am very grateful to Dr. Knapp for beginning the matter as he did; for unless these subjects are considered from the very basis and all the underlying and fundamental points, however elementary, are considered, we are likely to misunderstand and draw wrong conclusions. Dr. Allport's paper sets forth many differences that arise in the opinions of various men from the exigencies of practice and the varying conditions with which we are surrounded. Different men see different groups of cases.

It is interesting to know how many cases of ear disease tend to mastoid inflammation, because it is very variously viewed by different men. It is quite different in a small town from what it is in a large city, and a teaching clinic will find cases much in excess of those found in private practice, where a man is likely to know the beginning and ending of cases, as the man in a clinic in a large city can not possibly do. At least 1 per cent. of my cases have shown disease demanding attention—at least 4 per cent. showing mastoid disease of marked character. Latterly I have seen above 2 per cent. of operative work, based on my total number of new cases seen each year. On the other hand, the cases of mastoid inflammation which did not eventuate in such need were also numerous, in that every year I have about one hundred which go through without any operative need. I do wish to claim that following much such lines as have been laid down by Dr. Allport with the hot douche and such similar measures, the majority of these cases, unless they be streptococcus cases, can be brought through with good conservative measures. The Doctor's remarks in regard to the black race are very good, but my statistics would not show the same thing. Perhaps half the population around the Polyclinic, in which I work, is colored, and here the number of cases of ear disease and mastoid cases that I have seen in the colored race would apparently entirely conflict with the Doctor's view. Among them I have seen many cases where without any apparent involvement of the tympanic cavity, there was extensive mastoid disease. The point brought out by Dr. Knapp is of exceeding importance, and elementary as is the matter it is essential that we bear in mind the fact that we have to deal in these cases with a condition of the whole middle ear. The middle ear begins at the paryngeal mouth of the Eustachian tube, and does not end until you reach the last pneumatic cell in the mastoid, or wherever it may be. Therefore the question of otitis media is a much broader one than is indicated by some men.

We should bear in mind the anatomy of the tympanic cavity. I have much to learn about the anatomy, but one thing which I do know is that unmistakably and as a fundamental fact we have three portions of the tympanic cavity: the attic, the antrum and the atrium, or tympanum proper. Until the anatomy which I have indicated is kept in mind, there will be much poor work done. We should use specific terms instead of generalities and personal names. We should clean out the attic and atrium as well as the antrum in chronic cases. If we deal with these cases of middle ear disease without bearing in mind that the chronic cases differ from the acute, we will fail in a large proportion. Of course the streptococcus cases are serious from the very beginning, and the ones we bring to an apparent cure will often go to the grave with brain disease or other serious trouble, possibly involving the other side of the head. In the chronic cases, if we content ourselves with opening the antrum alone without opening the attic and tympanic cavity as generally understood, we will often fail. So in the thrombus cases, the acute ones usually begin in the jugular bulb and are frequently obliterated at that point. Ligation of the jugular is thus not necessary in these cases, while it is essential in others. We should carefully study our cases in order to properly understand with what we are dealing.

Dr. J. Holinger, Chicago—The term "radical operation" was several times used this afternoon for operations that were not radical in the original sense of this word. A very clear description of what is meant by the term may be found in the *Berlin. klin. Woch.*, No. 1, 1893. I was much interested in the paper of Dr. Gradle. Fistulæ of the external meatus, which are on its roof, are very often found in connection with suppuration of the attic. Fistulæ on the posterior wall of the external meatus are of different clinical importance. The different forms of fistulæ have different dignity, clinical and pathological, and they require different treatment. Fistulæ from the attic may heal as a rule much easier, after a few treatments, while fistulæ from the cells often have a sequestrum in the depth and will yield only to extensive operations.

Dr. E. C. Ellett, Memphis, Tenn.—I would like to make a statement in regard to the colored population not in accord with Dr. Calhoun's statements. I have been criticized on some observations I made as to the non-occurrence of adenoids in the negro, but about one-fourth of the mastoid cases I have operated on have been in the colored race. We do not have as much catarrh or ear trouble among the colored people as we do among the whites. One or two of the mastoid cases in the negro have been apparently unconnected with any preceding trouble in the tympanic cavity. Some of those I have had reason to believe were tubercular. In the negro, as in the white, we see few cases of mastoid trouble in comparison with the total number of cases of middle ear trouble. I have operated at as early an age as 6 months on typical cases, although there have not been many such instances. I would like to pay my respects to Wilde's incision, for if there is any procedure that has no place in surgery it is this so-called Wilde's incision. If the operator does not find a fistula in the bone in the cases where there is a subperiosteal collection of pus, it is because he does not look close enough for it. If there is not any pus outside of the bone this procedure accomplishes no more than can be done by leeching and the application of heat and cold. In the last two cases I operated on, one an adult and the other a child, there was a collection of pus outside of the bone, and it was only by the closest search with the probe that I could find the sinus. It could not be found by simple inspection. My experience with ossiculectomy and tympanic curettement has not been brilliant. One of the gentlemen mentioned a case with a rise of temperature after operation which was confusing. In the last case I operated on, the temperature had not yet been below 99 F., and about three days after the operation the face was swollen and the temperature went up to 102. It was due to mumps.

Dr. H. Knapp, New York City—I wish to report a case of osteomyelitis which belongs to the discussion. These cases are very rare. Recently a young man came to me with an immense swelling behind the ear. The bone all around was swollen and red. There was no fluctuation. From the antrum I liberated considerable pus, and there was a large quantity in the posterior cranial fossa. The sinus laid bare was covered with granulations which were very firm and could not be scraped off. I opened the bone back of the mastoid and found its diploë swollen, softened and full of small disseminate nodules of pus. Further back I found a large subperiosteal abscess which communicated with the posterior cranial fossa by a fistula situated about midway between the torcular and the knee of the sigmoid sinus. I thought I did a rather radical operation. The young man has not had any fever, he never had any chills and he did perfectly well for some time. Then all at once there was a temperature of 102 F. When I examined the case I found the flaps behind, where I had entered the mastoid, were swollen, and there was evidently a collection of pus. About five days later another abscess from above made its appearance from under the flap. When I left there was no fever at all, but to-day I have received information that there is a swelling under the trapezius muscle and a temperature of 103 F. My son says that if the patient is not better soon they will open it again. It is a rather extensive case of osteomyelitis. Operation at once allays the fever. The patient has not had any chills, but it is quite likely they soon will follow because this condition of the dura mater over the sinus is very suspicious.

I can also mention a case that is in the hospital yet, a child who came with a well-pronounced mastoid abscess. I told the parents it ought to be operated on at once. They decided to go home. That was the last I saw of them for five weeks, and then the child was brought in in a semicomatose condition, with a temperature of 105.5 F. I operated on it and found pus in the posterior cranial fossa and granulation tissue, not the same color as in the other case, but very thick. That child had a chill the next night. The next day I operated on her and found the sinus clogged with granulations, which were like the granulations outside, but contained some blood. But no blood came from behind or above. I went in 2½ inches with the probe, until I got blood. It was evidently a thrombus. I went down into the jugular fully 2 inches before blood appeared. The operation has been followed by a very good recovery. [August 8, 1900, patient has completely recovered.]

Dr. Emil Amberg, Detroit, Mich.—I am extremely glad to have heard the contributions, and especially Dr. Knapp's remarks on the skull. These are questions of fundamental importance. We know that in case of adenoids sometimes the nasal syringe is used. Such an instrument should be abandoned, especially with children. I am glad Dr. Knapp mentioned tympanomastoiditis, because we know from Politzer that every time the tympanum is infected there is some possibility of infection of the mastoid by the presence of pus. It is important that the use of the air douche should be abandoned in acute otitis media after a paracentesis has been performed. I do not regard a normal temperature as a contraindication for mastoid operation. As to primary mastoiditis, we know the frequency of this disease in cases of influenza. The small number of mastoid cases in the South may perhaps be accounted for by the comparative rarity of coryza, if such exists. The children do not, perhaps, blow the nose so much in the wrong way. I tell my patients not to blow the nose with both nostrils closed. I do not think I will use peroxid of hydrogen in these cases on account of the possibility of the distribution of micro-organisms by the bubbles. Dr. Allport has used the term, "the personal equation." This is a serious question, but the explanation can be found in an entirely different place. A knowledge of the anatomy is of great importance in otology, and I should like to know in how many medical schools there is sufficient material to exercise the hand and eye in order to be able to perform these operations afterward with due skill.

Dr. Norval H. Pierce, Chicago—I have found cases in children below 6 months of age. They are characterized by pain, temperature about 100 F., and swelling such as usually occurs in mastoid inflammation. In the first case I cut down and got a serous fluid, but no pus. This was beneath the periosteum and probably ran along the posterior surface of the external auditory canal and the middle ear. The other case I saw was very much like this and occurred soon afterward, and I put in an exploratory needle and drew off serous material without any pus. Flocculent particles containing round cells were found. Recovery followed without any symptoms whatever. There was no perforation of the tympanic membrane in either case.

Dr. McCarthy—I have a case that illustrates the remarks by Dr. Knapp in reference to the cancellous tissue that exists in the upper wall of the canal and extends into the horizontal portion of the squamous. A baby had earache and was brought in eight days afterward. On examination there was found no discharge from the canal, but a slight swelling above the auricle. There was absolutely no temperature. The baby nursed and smiled and seemed to be pursuing the natural course of life. An ice-bag was put on because of the swelling. The case ran along for about a week, the swelling still existing. One day the baby refused to nurse and I decided to open up the mastoid. There was a perforation into the middle fossa. The dura was exposed and a necrosed portion about the size of a dime was seen. The further course of the case was uneventful. The child showed no rise of temperature. The case would show the value of making the diagnosis of mastoid or intracranial trouble, and would also put a man on his mettle as to when he should operate. There was a point very well brought out by one of the doctors, which showed the fallacy of regarding the antrum as a separate portion of the tympanum. The antrum has been termed the "drip-cup of the attic." The antrum often is found filled with pus. The cavity of the tympanum proper would never hold the pus that is formed. It is very much like a case of dacryocystitis. You may have a purulent conjunctivitis and if the pus is drained through the nose there may be no dacryocystitis, but let there be some occlusion and inflammation at once takes place, and so here the pus is retained if there is occlusion, and then we get the typical symptoms of mastoiditis. In regard to the occurrence of mastoiditis in the negro, Dr. Calhoun's cases must be very mild, for I have seen many cases in the negro and I do not think there is any differentiation to be made as to the negro race. There is no doubt that not every case of mastoiditis needs operation, but how we can determine how many need it and how many do not is very difficult to answer. While the discharge keeps on from the tympanic cavity considerable regard must be paid to the temperature. I can not conceive of an adult having a temperature from an ordinary otitis media, especially after some two weeks. I had a case which taught me the lesson of not confiding too much in the patient. I had a man with an otorrhea, an acute otitis media, and I opened the drum and the discharge gradually slackened up. I used alcohol and the next day he developed a sclerosis wherever the alcohol had touched. He told me this happened wherever alcohol was used on the skin. The stenosis gradually diminished. When the drum was seen it was found to be healed and the man gradually got better by the introduction of gauze. Two or three weeks afterward he came back complaining of neuralgia, which reached forward to the eye. I told him to consult his family doctor to see if he could find any cause. The patient had a course of phenacetin and other analgesics, and then came back to me. I put him in the hospital and watched him for a few days, and the temperature went up to 102 F. I then operated and found the mastoid not involved. On exposing the sinus I found it covered with granulations and the sinus wall was thickened.

Dr. S. F. Snow, Syracuse, N. Y.—There have been a few points brought up that I would like to emphasize, particularly the hot water method that Dr. Chambers has mentioned. I know that hot water injected as he describes does good. It will control a good many cases where we even have pus in the mastoid. I, personally, am using ice, for the simple reason that cold constantly applied without any chance for the temperature of the part to rise again after it is put on, controls the inflammation the same as hot water does, and it also prevents the multiplication of pus elements. I have been conducting a series of observations that show quite conclusively that if we use ice in this way we will avoid operation in fully 25 per cent. more cases than under the usual lax method. There is no limit to the time ice may be constantly applied, so long as it continues to do good. We are justified in keeping it on beyond "thirty-six or forty-eight hours" if the symptoms continue to improve. At least let us use it during the interval that usually exists between our diagnosis and the actual time of operation.

Dr. L. J. Lautenbach, Philadelphia—There are all variations in cases and treatment. I wish to mention a case operated on by Dr. Fulton. There was some caries of the middle ear discernible. The case followed scarlet fever in childhood. There had never been any pain; there was a constant discharge and no hearing. The patient was operated on a year and a half ago, and within twenty-four hours he left the hospital and never afterward had a symptom. He was in my office about a week ago, and he could hear the watch at ten or twelve inches and could hear the voice very readily. It does not seem reasonable that all cases should be examined by the same standard. For instance, that individual would have sacrificed at least much of his hearing. If our treatment is conservative we should make it so, and if it is radical it should be radical. But every case must be studied carefully and then only can we decide the proper treatment to institute. If I find one thing fails I then go a step further. We may, in our papers and discussions, be dogmatic, but in our treatment we all do the best we can in each individual case.

Dr. H. Knapp, New York City—One of the gentlemen asked me to say a word about the ophthalmoscopic condition in sinus thrombosis. In many cases I have noticed that they can be diagnosed very readily. First to appear is retinal congestion; the veins are enlarged and tortuous, first on the side of the affected ear, then in both eyes. Then the retinal congestion develops into the picture of neuroretinitis; optic discs and adjacent retina are diffusely swollen and opaque, not the picture of abrupt jockey-cap elevation of the choked disc from cerebral tumor. Then when the sinus thrombosis is recovered from, spontaneously or by operation, the ophthalmoscopic signs disappear *pari passu* with the progress of the recovery, to end in perfect restoration of sight. The interrupted course of the pyemia, in the affections of joints particularly, is accompanied by corresponding aggravation and improvement in the ophthalmoscopic condition.

APHASIA WITH LETTER-BLINDNESS, WITHOUT WORD-BLINDNESS; WITH RIGHT HEMIPLEGIA AND PULMONARY TUBERCULOSIS.*

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PHILADELPHIA.

I wish to make a brief record of a case of pulmonary tuberculosis with intercurrent hemiplegia of the right side and motor and sensory aphasia, with letter-blindness, but not word-blindness. The patient is a physician and a member of the faculty of a well-known institution. He is now 35 years of age; he had pneumonia sixteen years ago, and had a slight attack again two years ago. His tubercular infection is probably now of about four years' duration. At the beginning of the year 1899 both lungs were infiltrated; the right, generally consolidated. The fingers were clubbed.

January, 2, 1899, he had a sudden paralysis involving the right face, arm and leg. It was apparently simultaneous throughout this distribution, and did not extend from one area to another. There was a short period of unconsciousness. I saw him the next day at the request of Dr. D. D. Stewart, of Philadelphia. During the first twenty-four hours he could speak only the word, "no." In the next twenty-four hours he could speak four words and could move his right arm and had good control of his facial muscles; these muscles, however, were not so well innervated on the following day, but quickly regained their normal power. Sensation was good all over the body. The tongue was protruded to the right and the affected arm and leg were moved freely. The knee-jerks were normal on both sides; the plantar reflex was also normal. On the ninth day he walked to the sitting-room and insisted on helping himself to tobacco and a glass of wine, and from that on he steadily gained power. I examined the visual fields for form, but was not able to distinguish any departure from normal. January 13 the patient was able to write his name for the first time, and his vocabulary was steadily increasing.

When shown a silver pencil he could not name it; when he was asked if it was a knife he said, "no"; a piece of wood, "no"; a pencil, "no" (word-deafness). When he was asked if it was something to write with, he answered "yes." Upon being asked if a key were several things, including "key," he said "no." Having been asked if it was something to open the door with, he said "yes, yes."

On January 20, the patient was shown a silver dollar; he could not say what it was. "Is it a watch?" "No." "Is it a wheel?" "No." "Is it a piece of iron?" "No." "Is it a dollar?" "Yes, it is a dollar." The patient was given a few coins; he added them in a correctly built column with the total value correct. He mispronounces some words and substitutes words incorrectly in a sentence. For example, he said: "the quiet was," instead of the reason was; "spade," for paper; "glass of ice water," for a pair of scissors; "was late," for he was weak; "blockade," for dump; "bathree," for paper; "put those groups afay for me," for put those grapes away for me—paraphasia.

He read the daily paper regularly and read McMasters' history of the United States and enjoyed it. He had letter-blindness, but not word-blindness. When shown the alphabet he counted "1, 2, 3," instead of a, b, c. When shown "o," he could not call it; neither could he call "i," "l" or "d"; but shown the words boy and child, he instantly pronounced them. He said "boat," for cars; "pipe," for glasses; "spoon," for comb and so on.

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* Presented to the Section on Nervous and Mental Diseases, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

The tubercular process was marked by dulness extending posteriorly as far as the angles of both scapulæ and by soft mucous râles in both apices. Tubercle bacilli were present. There was no fever at any time, and the pulse ranged from 76 to 88. There was no hemoptysis. His treatment included potassium iodid, 5 to 10 grains, t. i. d., and the subcutaneous injection of antitubercle serum in the upper arm at intervals of from two to four days, until the latter part of March, 1899, when he went, on our advice, to the orange district of southern California. Now, after nearly a year and a half, he enjoys a fair amount of health, his tubercular process is not checked, his aphasia and agraphia are still present, though in less pronounced degree.[1]

Without going further into this case, it is interesting to note the occurrence of hemiplegia in the course of tuberculosis. Whether in this case it was due to a hemorrhage, a thrombus or an embolus we can not positively say; it was probably the latter. The letter-blindness is a most interesting and unusual feature. We may have word-blindness without letter-blindness. Letter-blindness is not always looked for, and that is partly the reason why so few cases have been recorded. Dr. Hinshelwood,[2] of Glasgow, has recently published a clear exposition of the subject, with records of interesting cases, and he shows that if by disease, the visual word-center is completely destroyed, or if it is completely cut off from the primary perceptive centers in the occipital lobes then the patient is both word-blind and letter-blind. But if the destruction is only partial, and that part of the center in which are stored the visual memories of letters remains intact, then the patient, though still able to recognize the individual letters by sight, will no longer be able to recognize and interpret words, because he has lost the visual memories for words, which he had acquired by years of laborious effort.

Clinical evidence goes to prove that all these memories for words, letters and figures are functionally independent and have a distinct and separate anatomical seat. It would appear that the positions of these three centers are adjacent, and while the boundaries have not been defined with precision, pathological experience tends to prove that the centers in which are stored the visual memories of letters and words includes the supramarginal and angular convolutions, both of which belong to the inferior part of the parietal lobe.

In most people this center is supplied by the left Sylvian artery, and in the case which we have reported, it is quite likely that, being a right-handed man, an embolus or hemorrhage of this artery caused the hemiplegia and the consequent aphasia. In cases in which either word-blindness or letter-blindness, or both, exist without hemiplegia we may explain the lesion as situated in a branch supplying the visual word or letter center, while the branches going to Broca's convolution and the motor areas for the face, arm and leg remain undisturbed. In our case the hemiplegia was comparatively transient, function was restored in a few days, but the aphasia persists at the end of nearly a year and a half, much to the annoyance of the man whose living depends on the free exercise of his highest intellectual faculties.

DISCUSSION.

Dr. F. Savary Pearce, Philadelphia—In regard to the recovery from hemiplegia, and in regard to tuberculosis of the brain, I simply wish to record my feeling that hemiplegia or paralysis from the tubercular processes, which apparently this case was, are more apt to recover, at least transiently, than paralyses from other causes, such as hemorrhage or even from specific disease. I remember full well the instance of a young child who had a tubercular meningitis with sequent hemiplegia. A shifting of the paralysis from one side to the other, involving the leg and the right side of the body, then one extremity after another in order of pressure made or relieved by the exudate or its absorption. The case came to autopsy, and we found tubercular exudative processes then to be mostly about the base of the brain. The palsy had shifted in this case, due to exudation and absorption with shifting pressure results.

Dr. James H. McBride, Los Angeles, Cal.—There are occasionally peculiar transformations of aphasia in syphilitic brain lesions. One patient I had was attacked a number of times with motor aphasia, from which he recovered; then at other times with auditory aphasia; and at others with visual aphasia. The form was distinct in each instance, and he again and again relapsed and recovered, sometimes having one form and at other times other forms.

About 1874 there was reported, in the *British Medical* Journal, the case of a right-handed child who, at 10 years of age, had a lesion in the left third frontal with motor aphasia with subsequent recovery of speech. Two years later a similar lesion on the right side produced permanent aphasia. An autopsy showed two lesions, the first in the left hemisphere, the second in the right.

Dr. W. G. Spiller, Philadelphia—When he observe a case of aphasia with localizing symptoms, we naturally incline to the belief that there is a focal cerebral lesion, but such cases may occur in which a lesion can not be seen either by the naked eye or the microscope. I recall a case in which no signs of nephritis had been found, and the symptoms of aphasia were sufficiently localizing to justify an operation. The day before the one set for the operation, evidences of nephritis were found, the operation was postponed, and after the nephritis had been treated, the aphasic symptoms disappeared. I have recently seen a case of Dr. Lloyd's, with localizing aphasic symptoms without any lesion whatever in the brain. This patient also had nephritis. Cases of hemiplegia and aphasia have been reported in which carcinoma has been found in various parts of the body. In one or two of these, lesions have been detected in the meninges; but in others no lesions which would explain the symptoms have been found. I am not aware that any one has reported cases of tuberculosis of various organs of the body causing aphasia, but if aphasia can occur as a result of some poison produced by carcinoma, it might possibly be produced by tuberculosis.

Dr. Guy Hinsdale—I did not look upon this case as being one in which tubercular deposits occurred in the progress of the disease about the centers which govern speech and writing. It seemed to me more likely inasmuch as there was an exceedingly rapid onset in which the paralysis extended immediately over one-half of the body with the rapidity of a thunderbolt, there was probably an embolus, or something that was carried to the brain through the circulation from some point of softening in connection with the pulmonary tuberculosis. Of course, we have thrombi of the extremities in cases of pulmonary tuberculosis, giving rise to the most painful symptoms; why not also a thrombus or embolus in the brain?

Recent public health legislation in New Zealand consolidates and amends the law previously in effect there. It provides for a minister of public health, to be appointed from the Executive Council, by the governor, and bestows exceptional powers on district health officers.

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[1] The patient died in California, of phthisis, in the summer of 1900.

[2] James Hinshelwood: Letter-, Word-, and Mind-Blindness, London, 1900.

COMBINED SCLEROSIS OF LICHTHEIM-PUTNAM-DANA TYPE ACCOMPANYING PERNICIOUS ANEMIA.*

MARK A. BROWN, M.D., F. W. LANGDON, M.D.,
AND D. I. WOLFSTEIN, M.D.
CINCINNATI, OHIO.

ABSTRACT OF CASE BY DR. BROWN.

I was first called to see the patient early in July, 1899. He had been in failing health, with varying periods of improvement for between three and four years. To about a year previous to my first seeing him, however, he dates his illness, but was able to be about attending to business until February. The principal point noticeable at first glance was the marked emaciation, and the peculiar color to the entire body; not the blood-cancerous cachexia, nor the anemia of Bright's disease, nor the bloodlessness of the tuberculous, but a brown-yellow color which I have never typically seen save in pernicious anemia. To rule out any other cause, however, a careful physical examination was made. The heart, aside from a soft basal systolic murmur, probably anemic in character, was normal, nor could anything wrong be detected in the lungs. The liver and spleen were not palpable, and were of normal size on percussion. Remembering the similarity that often exists between carcinoma of the stomach and pernicious anemia the usual tests were applied before the former could be eliminated. The urine was normal. The probable diagnosis of pernicious anemia was made and the blood examination, July 8, 1899, resulted as follows: The blood, obtained only on deep puncture, was very watery, with no tendency to coagulate. A small hematoma rapidly formed in the lobe of the ear. Reds: 1,279,440 (288 squares); whites, 3600 (1200 squares). The hemoglobin estimation average of three tests—ten drops used at each test and the result divided (Fleischl instrument)—was 32 1/6 per cent., so that the color-index was 1.3. A subsequent note states that blood films took the Ehrlich triple stain with marked polychromatophilia. Poikilocytosis was very pronounced. The stained specimen showed numerous nucleated red corpuscles, the megaloblasts greater in number than normablasts. From this examination, not only was a diagnosis of pernicious anemia unmistakable, but the prognosis could be stated as absolutely fatal. The usual treatment with Fowler's solution was instituted, and the patient was soon able to take 15 drops three times a day. Occasionally symptoms of poisoning would supervene, when the arsenic would be discontinued for a while. He seemed to gain under this treatment, except in his legs, which became progressively weaker and more emaciated. The patellar reflexes, right and left, were hypersensitive. The appetite was enormous, the patient seeming never to get enough to eat. During the summer the fact most worthy of note was a genuine attack of insolation, with temperature 107, flushed face and full bounding pulse. He recovered completely from this in about ten days. I saw him occasionally during the fall and early winter, and he appeared to be holding his own, except for the weakness of his legs. He thought that electricity might be of some benefit in nourishing the wasted muscles, and asked me to advise him as to hospital treatment. He entered the Cincinnati Hospital early in January, 1900, on the service of Dr. F. W. Langdon.

ABSTRACT OF CASE BY DR. LANGDON.

A. W. C., aged 34, an American, married, with no children, was supervisor in a hospital for eleven years, and later proprietor of restaurant. He was admitted to the hospital in January, 1900, complaining of general weakness and inability to walk on account of stiffness and weakness in his legs.

Family History.—His father is living at 74, and in good health. His mother died at 60, of chronic blood disease; she was ill a year. The patient thought her disease was similar to his. He is the first of three children; the other two living and well. There is no nervous disease in family.

Previous History.—He had had no syphilis, and only the ordinary children's diseases, and gall-stone colic five years ago. Alcohol and tobacco had been very moderately used.

Present Illness.—He was in ordinary health to July, 1898, then weakness followed, increasing to February, 1899, when he was first confined to bed owing to rigidity in legs. A diagnosis of pernicious anemia was made by Dr. M. A. Brown, in July, 1899.

Condition.—His height was 5 feet 10½ inches, his weight. when well, 140 pounds, though he was much emaciated. He had a dark complexion, with gray hair—black a year ago—gray eyes and good teeth. His pulse was 108, of low tension, with no cardiac bruit, and no apparent arteriosclerosis. The conjunctivæ, lips and tongue were only moderately pale, not suggesting extreme anemia, there were no cranial nerve palsies nor special sense disturbance.

Motion.—His legs were rigid, but he could move all the joints voluntarily, though he could not walk on account of the weakness and rigidity. There was inco-ordination of the upper and lower extremities. He sat up some daily.

Sensation.—There was some defect of tact and pain—delay and hypoesthesia—about the ankles. The knee-jerks were plus. There was ankle-clonus and Babinski's sign present on both sides.

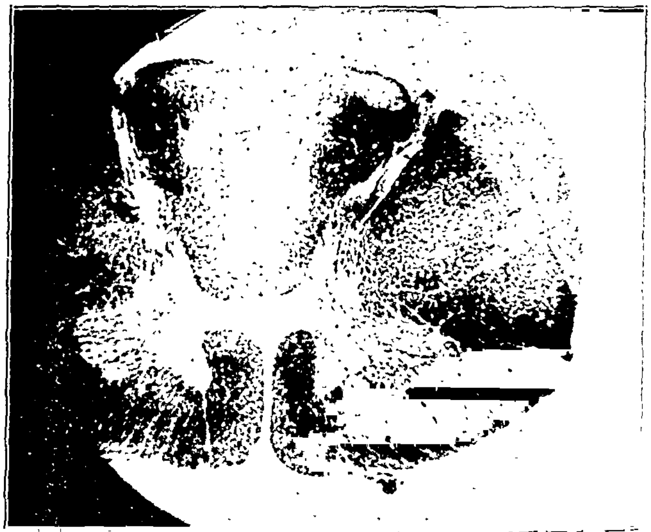

Fig. 1.—Cervical reg. (upper). Degeneration in lateral and posterior tracts. Vacuolisation of the white matter in the pyramidal tract

Blood Counts.—Feb. 13, 1900, reds, 1,661,805; whites, 3,000; hemoglobin, 54 per cent.; color-index, 1.54; eosinophiles, 9 per cent.; neutrophiles, 49 per cent.; small lymphocytes, 39 per cent.; large lymphocytes, 3 per cent. Poikilocytosis was not marked and megaloblasts in all three were seen. March 20, 1900, reds, 1,183,330; whites, 2100; hemoglobin, 36 per cent.; color-index, 1.53; eosinophiles, 10 per cent.; neutrophiles, 47 per cent.; small lymphocytes, 37 per cent.; large lymphocytes, 6 per cent.; poikilocytosis; megaloblasts, 1; unnamed form of nucleated red, 1.

Subsequent Course.—There was gradually increasing weakness, with little or no mental defect, to April 10, 1900. There were mucous stools and epistaxis at intervals. For treatment he was given full diet and arsenic and iron in various forms, none seeming to improve the blood state, which steadily deteriorated. The general sense of well-being of the patient seemed improved by the diet and medicinal measures. Death, preceded by coma for twenty-four hours, occurred on April 11, 1900.

Autopsy.—There were no marked naked eye changes in the cord or brain, and the organs were generally healthy.

ABSTRACT OF REPORT ON MICROSCOPIC EXAMINATION, BY DR. WOLFSTEIN.

Macroscopically the cord showed nothing abnormal; there was no shrinkage of the posterior tracts, no distortions, nor inequalities, and no areas of softening were made out anywhere.

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* Presented to the Section on Nervous and Mental Diseases, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

The areas of the crossed pyramidal and posterior zones were of a duller grey-pinkish color than the surrounding areas. The cord, after being hardened in bichromate solution, showed most marked areas of degeneration in the tracts named. The principal degenerations, on microscopic examination were seen to be in the posterior and in the lateral tracts. That in the posterior commenced as low down in the cord as the lower lumbar level, and could be traced all the way up to the level of the pyramidal decussation at least. The tracts of Goll and Burdach were involved in part, but not completely. The so-called oval field of Flechsig was free, as was also an area—wedge shaped—lying immediately posterior to the posterior commissure—the ventral field of Goll's tract. The column of Burdach was involved only in parts, and between the column and the border of the posterior cord grey, there was, in all levels, healthy nerve tissue. As said, the ascending degeneration had the usual upper limits, not extending beyond the *nuclei* of the posterior tracts.

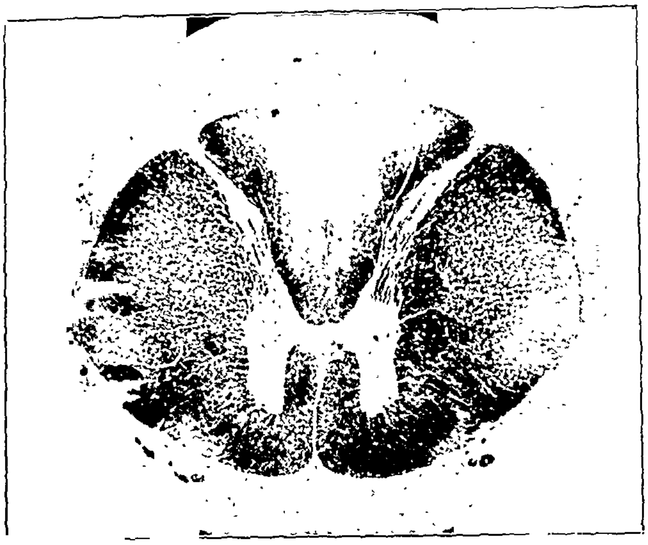

Fig. 2.—Lower cervical. Degeneration in posterior and lateral tracts, with marked vacuolisation.

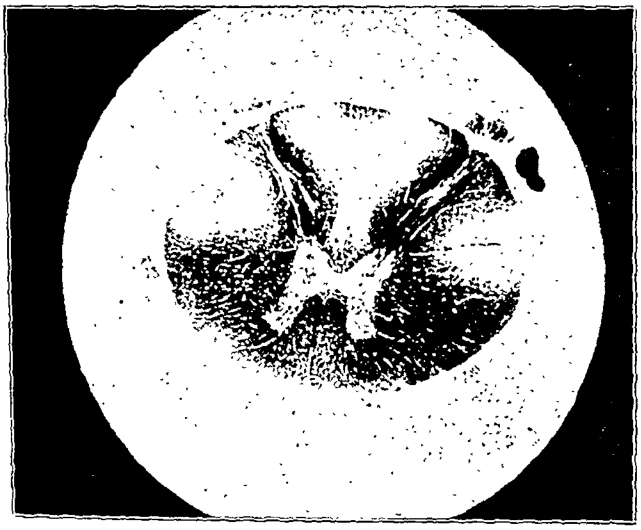

Fig. 3.—Upper dorsal. Degeneration in lateral and posterior tracts.

The *pyramidal tract* was *degenerated* downward from a level as high up in the medulla as that of the olives. Here there was an area, quite small, occupying a position near the periphery of the medulla, dorsal to the olive and just ventral to the corpus restiforme. Above the level of the motor decussation the degeneration was quite well marked, about midway between the nucleus of cuneatus and the olive. The degeneration was quite marked as low down in the cord as the sacral region, the ending of the pyramidal tract degeneration being lower down than the beginning of the ascending degeneration.

I have not yet been able to convince myself that there was any degeneration of Lissauer's marginal zone. In the dorsal and cervical levels the entering posterior nerve root bundles appeared slightly involved. The ganglia were unfortunately not examined. As to finer microscopic details there did not seem to be any marked vascular changes; in certain places the walls of the smaller vessels showed hyaline changes, but there was no evidence of inflammation. There were no areas of small round-celled infiltration, nor of anything that might be taken for small, multiple, hemorrhagic *foci*. In both posterior and pyramidal tracts there was *marked glia* increase. In many places nerve-fibers seemed to have fallen out so that, especially in the pyramidal tract, there was the *perforated riddled appearance seen in advanced degeneration*. The *Marchi* method showed the usual picture.

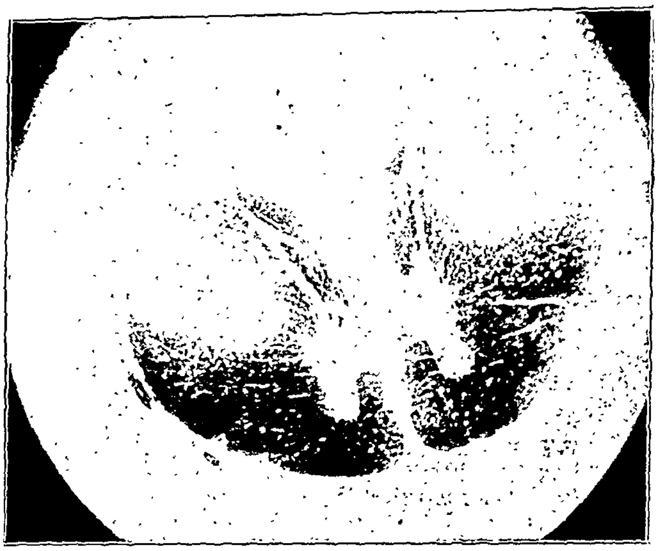

Fig. 4.—Mid-dorsal. Marked degeneration in lateral and posterior tracts.

I have no theories to offer in explanation, as I would dislike to draw conclusions from one case only. I rather think, however, that the phenomena observed in this case are at variance with the view of Nonne that the degeneration is due to ascending and descending degenerations, following on multiple areas of softening of *inflammatory* or hemorrhagic character which several areas become *confluent* and give the appearance of systemic lesions. On the contrary, from the extent and quite typical disposition of the degeneration in the areas named his view is more in consonance with that of Burr and other authors who consider the lesion as a primary systemic degeneration—primary as far as the *cord* is concerned, and distinctly

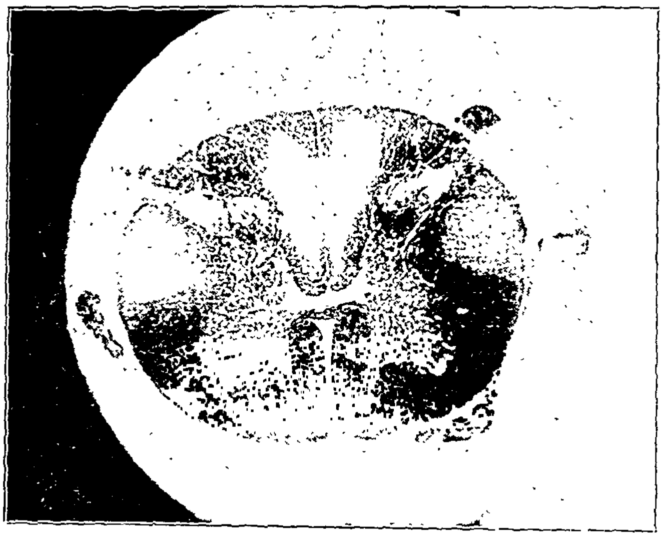

Fig. 5.—Lumbar region. Degeneration in lateral and posterior tracts.

neuronic, but secondary etiologically to some condition superinduced by the pernicious anemia. This opinion is also shared by Dr. Langdon.

DISCUSSION.

Dr. W. G. Spiller, Philadelphia—I think we should be very careful in drawing conclusions from any one case. I have examined sections from cases of severe anemia, and am at present studying a case of this character. In Dr. Wolfstein's specimen the degeneration in the lateral columns is quite clearly defined; in the posterior columns, as he has pointed out, it is less systemic. In the specimens of the case that I am at present studying the degeneration is much less systemic, and the vascular disease is very considerable, the small vessels of the spinal cord are thickened, and the degeneration of the lateral columns is more diffuse than in Dr. Wolfstein's case.

Dr. Kenniston—I would like to ask the gentleman about the Leszynsky reflex; I am studying that in epileptics. One or two are post-hemiplegic cases, and I have found the extensor reflex on the paralyzed side. Curiously enough, when that patient has a seizure, immediately thereafter the extensor reflex is present on the paralyzed side, and the flexor response on the other, and an hour afterward there will be a flexor response on the paralyzed side and perhaps a response on the other side.

Dr. Hugh T. Patrick, Chicago—I should like to ask Dr. Wolfstein whether he does not think that some of the structural changes described in this case were due to artifacts. It seems to me, from the naked eye appearances, that some of the specimens certainly show signs of postmortem injury.

Dr. D. I. Wolfstein—I am very glad to learn that Dr. Spiller agrees partially with me as to the result of the study of this case, and I shall study it more carefully. As to the Leszynsky reflex, I suppose it is present in these cases on account of the involvement of the pyramidal tract. With regard to the question of artifacts, I agree with the chairman, as some of these changes were probably due to postmortem injury.

CROUPOUS PNEUMONIA.*

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The old masters of our profession had very imperfect ideas of etiology, therefore taught faulty therapeutics. They thought croupous pneumonia to be the result of fluctionary changes in the blood brought about by cold, etc. They had an incorrect idea of the character of the cause of the first step in the process of inflammation, that is, irritation caused by bacteria. They recognized the buffy coat of the blood and the rapid increase of fibrin in pneumonia, their essentials in the inflammatory process.

The correction of this condition was to be accomplished by rapid depletion; hence blood-letting one or more times until the radial artery ceased to be strong and corded.

Next followed the revulsion by what they termed an emeto-cathartic composed of 10 grs. hydrargyri chloridum mite, 10 grs. pulvis jalapæ, and 2 or 3 grs. of antimonii et potassii tartras. From the beginning of the attack the patient was kept nauseated with frequent doses of tartar emetic.

In the latter part of the second and the beginning of the third stage they gave either calomel or hydrargyrum pill combined with small doses of opium and pushed to full ptyalism, the object of which being to defibrinate the blood and arouse the secretions.

Their expectorants were squills, tinct. senegæ, lobelia and ipecac. If the case occurred in a malarious district 20 to 25 grs. of quinin were given daily or an equivalent of pulvis cinchonæ; this indeed was the only scientific remedy that was used. In the 60's the quinin was reduced in quantity and given in 2-grain doses frequently repeated as a stimulant to the vasomotor system. Alcohol and other stimulants were forbidden until the heart's action became rapid and weak. A few physicians ventured to give digitalis in the third stage, but many condemned it as highly injurious.

One of the so-called sheet-anchors was extensive blisters applied over the affected lung, which were kept irritated and discharging during the course of the disease. As a matter of course, we know now this was adding fuel to the flame. Later, blisters were not applied until the latter part of the third stage, when crepitant redux could be heard. It was claimed for the blisters so applied that they called forth the reserve force of the individual and hastened resolution. This change occurred in the latter part of the 50's and the beginning of the 60's, after which instead of blisters in the first stage, there was substituted counter-irritation by scarification and cupping over the affected lung. This was a vicious and cruel process; the click of the scarificator grates on my ears even to-day.

In the middle or latter 60's the scarificator and blister gave way to counter-irritation—mustard sinapisms, turpentine stupes, and painting the chest with tincture of iodin. Later these were followed by emollient poultices.

About 1858 Dr. Austin Flint struck the death-blow to blood-letting, by his experiment in treating 25 cases of pneumonia with good diet, tonics and iodins, greatly reducing the death-rate. This is not all the advantage that was gained by this distinguished American physician, and while it added nothing to our knowledge of the etiology of the disease, it thoroughly revolutionized the treatment, destroyed the theory of depletion, ptyalism, blisters, etc.

This caused the physicians to look about for more rational therapeutics. Mercury was used only in small doses, guarding carefully not to ptyalize; purgatives were abandoned for mild laxatives, antimonii et potassii tartras was abandoned and a substitute found in Norwood's veratrum viride, which is a reliable heart depressant, diaphoretic and sedative to the nervous system, its action in slowing the heart, quieting the nervous system and producing diaphoresis was so efficient and prompt that the physicians were ready to cry out, Eureka! It is now demonstrated that it is in no sense curative.

The carbonate of ammonium, because of its so-called power of liquefying the blood and as a heart stimulant, was believed to be curative. That it is a quick transient heart-stimulant is true, but it is in no sense curative. A large number of other remedies have been tried and found wanting; therefore it is not necessary to name them.

When the early physician used potassium nitrate it was because of the supposed *antiphlogistic effect*.

Hydrotherapy, by either warm or cold baths, has had many advocates; the first could only be beneficial by calming the nervous system, the latter by lessening the temperature, neither of which could be considered as curative. The German cold chest-pack might be beneficial in two ways: 1, reducing the temperature; 2, increasing the blood in the lung, thereby increasing phagocytosis.

The only remedies which we bring over from the past —except digitalis—are those which are more or less germicidal, as mercury, potassium nitrate, quinin and alcohol, the last of which is of doubtful utility, possibly injurious, and not needed now, because we have better remedies for the same purpose in digitalis, strophanthus, nitroglycerin and strychnin.

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The first theory in the right direction as to the etiology of pneumonia was promulgated by Dr. Francis M. Johnson, of Kansas City, Mo., who read a paper before the Kansas City District Medical Society in 1875, in which he claimed that pneumonia should be taken from the list of inflammatory diseases and placed in that of essential fevers. At this time the germ theory of disease was beginning to impress the medical minds of the country, which theory I accepted in connection with Dr. Johnson's theory of pneumonia, and modified my previous treatment accordingly, by giving at the beginning a calomel and rhubarb purge, except in cases where there was jaundice caused by acute duodenitis, misnamed bilious pneumonia.

The other remedies which I used in the various combinations adapted as I thought to the conditions, potassium nitrate, potassium bromid, ipecacuanha, minute doses of calomel, Dover's powder as an anodyne and diaphoretic, the terebinthinates, cold sponging, and emollient poultices to the chest.

In the second stage I begin the use of digitalis and strychnin in small doses, increasing the dose to meet emergencies, rarely using alcohol.

While Dr. Johnson's theory is not widely known, it marked a decided change in the treatment of pneumonia in that vicinity.

When Fränkel and others discovered that the diplococcus was always present in pneumonia, and which excited the initial irritation, this established the etiology, and that it was infectious. True streptococci and staphylococci are almost always present in the second stage, as a result of structural changes caused by the diplococci. This marked another epoch in the therapy of this disease as I think based on incontestible facts.

I then adjusted my treatment to this known etiological factor and its associated complication of streptococci and staphylococci, using only germicidal remedies of creosote, eucalyptol, guaiacol, mercury, combined often with the terebinthinates and balsam of copaiba.

In the first and second stages, long before this time, it had been recognized that the most frequent cause of death in pneumonia was edema of the lung, caused by weakened heart action, particularly the right side, and paralysis of the vasomotor nervous system. To meet this indication, I began the use, in the second stage, of digitalis, strophanthus and strychnin, later nitroglycerin, if needed, abandoning entirely alcoholic stimulants.

I also used in the first stage, inhalation of the tincture of iodin, and menthol, because of their germicidal effect, and ceased using all counter-irratation as illogical, as it lessened the amount of blood sent to the lung, thereby lessening the possibilities of phagocytosis.

About 1885 I ceased the germicides mentioned, and began salicylic acid in full doses every three or four hours. Now I use the sodium salicylate, 10 to 15 grains, every three or four hours. I continue this until the fifth or sixth day, when I cease it, unless new structure is being attacked, because it is fairly well demonstrated that the entity upon which the germ subsists is destroyed by this time and the germ dies, leaving only the pathological results to deal with.

The effects of sodium salicylate are germicidal from its start in the mouth until its elimination by the kidneys and mucous membranes. That it rapidly enters the blood is evinced by the fact that in a very few minutes it can be detected in the saliva and secretion of urine. Benz and others claim that when the salicylate of soda comes in contact with the carbonic acid of the blood it is converted into salicylic acid again, thereby increasing its germicidal effect.

When there are indications of the presence of streptococci and staphylococci in large quantities, I have used the antistreptococcic serum with positive results. To relieve shock, control pain and produce diaphoresis, I give three doses of 5 to 7 grains of pulvis Doveri during the exacerbation of fever.

To summarize the therapy of pneumonia: I administer a calomel and rhubarb purge at the beginning; afterward the alimentary canal is to be kept open with castor-oil and turpentine. Three hours after the purgative I begin with the sodium salicylate, 10 to 15 grains, given in 4 drams of Phillip's milk of magnesia. During the exacerbation of fever I give the pulvis Doveri as above mentioned. The digitalis, strophanthus and strychnin are given in the middle of the second stage in small doses, increasing as the heart may demand. About the fourth to sixth day I cease giving the sodium salicylate and substitute for it tincture of ferrum chlorid, potassium iodid, quinin, nitroglycerin; as a matter of course, the heart tonics and stimulants must be continued in full force. During the last two years I have been using with great benefit oxygen inhalations.

The patient's diet should not be restricted, unless he be jaundiced by acute duodenitis, which is often associated with croupous pneumonia; then the diet should be restricted to milk and eggs.

DISCUSSION.

DR. WARREN B. HILL, Milwaukee, Wis., said that we have not yet arrived at any logical method of treating this condition of acute pneumonia. It is true that we know the nature and the etiology of the disease, for he assumed that the germ had been isolated, but in his opinion the disease is one of mixed infection. We have the diplococcus, staphylococcus and streptococcus, often associated with the very important germ of influenza, which modify the clinical aspect of the disease. As the result, we have not been able as yet to master the disease through the use of serums. Perhaps more has been done in this direction than he suspected, but his own experience had been such as would bear him out in making this statement. We can not attack the germ without doing injury to the rest of the body. He wished to direct attention to the fact that the discomfort and danger to the patient come almost entirely from two sources: 1, weakness of the heart, the cavities becoming too full of blood; 2, the circulation in the lung is checked and the blood lacks oxidation. The discomfort, the bad symptoms and death are usually due to these two causes.

In our treatment we aim to support the vital power and keep the patient comfortable and keep up the circulation. The pain is relieved by applications to the chest. He does not believe in the cold pack, except in the early, acute condition. When stasis has already taken place he would employ measures to dilate the vessels and make the flow of blood more easy through the lung. He would not agree with the lecturer who said that he wanted to put more blood into the lung; there is too much in it already. He would use digitalis for the purpose of toning up the walls of the blood-vessels to permit the flow of blood through the affected part. We should not neglect to make applications to the lungs; it does not make very much difference whether you put on a poultice or cotton, if you use some application which will relieve pain, keep up the circulation on the surface and maintain an even temperature. Again, as to the balsam of copaiba and other irritating drugs, recommended for their action on the lungs, it is a question whether we should not do harm instead of good from the amount of irritation in the lung by the use of this class of agents in pneumonia.

DR. J. TRACY MELVIN, Saguache, Colo., said that this subject of the treatment of pneumonia is the most disputed one in pathology. Some eminent physicians say: "Do nothing to the patient, it is a self-limited disease and patients will get along without drugs." Others say that if they know anything at all about it, drugs do good to patients with pneumonia. The paper has shown the results of the experience of the writer in support of the value of drugs in the treatment of pneumonia. The remarks of the last speaker show that while pneumonia is undoubtedly due to the diplococcus, yet many cases are the result of mixed infection. It is impossible, therefore, to lay down any hard and fast rules for the treatment of cases of acute pneumonia, yet there are several principles which can be followed by the practitioner and will aid him in the treatment of these cases. In the portion of the country to which the speaker belongs, pneumonia produces the most numerous fatalities; the number of cases treated each year is very large. The experience he has had in his last 200 cases of croupous pneumonia has led him to be positive—if he could be positive about anything—that the condition can be relieved by blood-letting. There are two conditions to be overcome: 1, the condition of the blood, and 2, the weakness of the heart which follows. Either you must relieve the stasis in the blood-vessels or increase the power behind to force the blood through the constricted blood-vessels. Among many practitioners veratrum viride has been lauded as almost a specific in the treatment of the first stage of pneumonia. Others rely on aconite for its dilating action on the blood-vessels, thus relieving the strain on the heart. He has abundant testimony that by the use of veratrum viride the course of the disease is cut short and the case convalesces two days earlier, and the whole course is milder than where this is not given. His own preference, however, is for aconite, which acts in the same manner. By following out this treatment he has seldom had a case last longer than five days before the crisis occurred. The next point in the therapy is to strengthen the heart so that, after the action of the veratrum viride or aconite has overcome the constriction of the vessels, the blood may be forced through them. Digitalis and especially digitoxin have been recommended for their physiologic action on the heart, but in strychnin we have a remedy, which is most useful in this condition. If there is any disease in the world in which we can recognize the efficacy of blood therapeutics, it is in acute pneumonia. In some parts of the country the mortality reported from hospitals is 25 per cent. In his portion of the country, if he did have any mortality at all, he would lose his practice, as the people expect pneumonia cases to get well if they receive proper attention.

Dr. Boyce—An important question in connection with the subject under discussion is the value of serumtherapy. To the speaker acute pneumonia is the type of a toxic disease. It has its nearest analogue among infectious diseases in diphtheria. The diplococcus of pneumonia and the bacillus diphtheriæ, or Klebs-Loeffler bacillus, are the sole micro-organisms which cause fibrous exudation upon mucous membranes. The clinical type of pneumonia depends entirely on the virulence of the bacillus and absorption of toxins. The clinical course of the disease is evidence of this. You may see your patient on the sixth day and he is a sick man; apparently he is still as sick as on any day previous; he has an exudate in the lung that is the same as the previous day, and suffers from fever and other evidences of this disease, but you go back again on the same afternoon and find the patient a well man; the oppression is gone, the fever has gone and he feels well, and you can see that he is relieved, but the exudate has not changed. No diagnostician can show any change in the exudate, but there is no dyspnea and the patient feels well and is hungry. The change that has taken place in the symptoms is very evident, but it has not been due to any change in the condition of the lung. On the other hand, we will have very great damage to the lung without the symptoms of the kind we see in pneumonia. For instance, we may have one of those large pleural exudates which come upon us and force the lung and heart to one side and leave only a portion of one lung for the patient to breathe with, and yet the patient will not have the dyspnea that he has in pneumonia. Therefore, the condition is not mechanical, but is due to the presence of certain toxins in the blood. Therefore, the best thing we can do for pneumonia patients is to dilute the toxinemic condition of the blood by saline injections, using the normal salt solution for this purpose; also local applications to the chest, ice-bags or hot poultices, the object being to relieve the nerves and to relieve pain, and give symptomatic relief, and by this means we do give relief to the symptoms. The treatment of serumtherapy is possible. As to the administration of veratrum viride, we know that the exudate can not be absorbed by this agent. I have seen cases of acute pneumonia in which the physical signs all disappeared in one day, and this occurred just as often in those who had taken veratrum viride as in those who had not. As regards the comparison instituted by Dr. Melvin between cases treated by blood-letting and those who are not, taking the violence of the attack into consideration and the difference between the patients treated in private practice and those in the hospital, 25 per cent. mortality is practically correct. He knew of a hospital which for a few years had lost over 40 per cent. in acute pneumonia, simply owing to the character of the clinical material. He thought that 25 per cent. in hospital practice corresponded to a mortality of 10 per cent. in private practice.

Dr. E. W. Mitchell, Cincinnati, Ohio, fully believes in toxins from the pneumococcus. From his observation of the disease in the hospital he has come to hold the view that acute pneumonia is an infection and not an inflammation; that the essential factor in the pathology is not the mechanical one, but the toxin effects. We hope for the development of a better treatment with the aid of antitoxin. If the analogy is so close between diphtheria and pneumonia we should hope before long to have the antitoxin which shall be as efficacious as the diphtheria antitoxin. The comparison has already been made between the class of patients which come into the public hospitals, the old drunkards, with liver and kidneys in a degenerate condition, the heart fatty, and whom no drugs will be able to save, and private patients. It is remarkable that death statistics do not show much difference between the death-rate of pneumonia—which had a death-rate of 40 per cent. fifty years ago—and that of the present day with all the advances of modern therapeutics. About our only hope in therapeutics, therefore, appears to be in the serum treatment. According to the last speaker, the normal salt solution is of value in acute pneumonia, and this seems reasonable. The speaker has not much faith in any form of local application, but his own preference has been for the hot bath, and internally he uses digitalin and strychnin. He is not sure, however, that he has obtained as favorable results as Dr. Eichberg claimed in his paper. Our resident physicians in the hospital are acute observers. A few days ago, at his hospital, the residents reported that they had noticed that all the cases treated by the hot bath had died, while those who did not have the baths got well. In private practice he has obtained the most satisfactory results from the hot bath. He has also had very good results from the use of oxygen in pneumonia. He regards it as a valuable heart stimulant. The most valuable part of the treatment is fresh air, and he said that he would take out the side of the house or drag the patient's bed into the open air if possible or necessary.

IRRIGATION OF THE COLON AS A THERAPEUTIC MEASURE.*

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The introduction of water into the bowel per anum is made by injection and irrigation. In the former, only a small amount of fluid is required; in the latter, the quantity is indefinite, as it is immediately allowed to again leave the system. The fluid acts in part mechanically as a foreign substance, provokes expulsion movements, as a solvent for intestinal catarrhal products, and, where large quantities are used, drags upon the upper intestinal coils, causing thermal changes and peristalsis.

These large quantities are introduced by means of the rectal tube, made of soft rubber, preferably with the opening at the end, to prevent clogging by fecal masses, as often occurs where the tube opens on the side. An ordinary fountain syringe is attached to the tube and the flow and pressure of the fluid is readily controlled by constricting the tubing. It sometimes happens that the tube coils upon itself when it enters the sigmoid flexure and the liquid is prevented from passing farther into the bowel. Turck,[1] of Chicago, has devised a special form of tube to obviate this. From two to four quarts of water are required, the temperature of which varies according to the nature of the case in hand.

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[*] Presented to the Section on Materia Medica, Therapeutics and Pharmacy at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

As these irrigations act mechanically in that the weight of the fluid draws upon the upper portion of the intestines, they are often of great value to relieve constrictions and incarcerated hernia, to remove fecal matter, mucus and epithelial remnants in chronic enteric catarrh, in dysentery, and in oxyuria, in fact, in all conditions where the system has been depleted or become vitiated by toxic autoinfection, such as hemorrhage, cholera, yellow fever, diabetes, uremia, shock, collapse, etc. In these cases the normal saline solution has been given with the best results, as seen by the improvement in the circulation, the re-establishment of the normal temperature of the body and the stimulating effect upon the nervous system.

Irrigation of the colon has been followed by immediate amelioration of the serious symptoms of the initial stages of appendicitis, and Love[2] reports several cases in which enemata of one-half gallon of water at 100 F., mixed with soap, were given high up, producing peristalsis and flushing out the irritating matters of undigested food, ptomains, etc.

Shuell[3] recommends the same treatment in typhoid fever, "to remove at as early date as possible all ptomains and decomposing substances from the colon." The fluid may be readily made to pass the sigmoid flexure and reach to, or near, the cecum. The injection will distend the bowel and remove the accretions from the sacculi. He also cautions against its use during the stage of necrosis of the glandular tissue, as the solitary glands of the large intestine are affected in a large proportion of cases.

Hensell[4] speaks of the value of colonic irrigations of one-half to one liter, twice a day, reaching up to the ileum, so that their effects are also directly upon the gall-bladder and liver; and Löwenthal[5] reports forty-one cases of catarrhal jaundice cured by this method. These cases were of the type of gastroduodenal catarrh, with symptoms of anorexia, pressure in the gastric and hepatic regions, constipation and great prostration.

AUTHOR'S CASES.

Case 1.—Typhoid fever; female, aged 20 years. When first seen, on the eleventh day of the disease, she presented every characteristic symptom, except the diazo-reaction, which was absent throughout. From the fourteenth to the twenty-fifth day her evening temperature ranged from 103 to 105 F., which was promptly reduced to 100 by cold spongings. On the evening of the sixteenth day she had a profuse hemorrhage from the bowels, and on the day following several smaller ones. Severe tympanites developed. At this stage irrigation of one-half gallon of water at 40 F., mixed with soap-suds and one-half ounce of turpentine, was resorted to, and after this was evacuated, one pint of normal salt solution was injected and allowed to remain. The ice pack was applied to the abdomen. After each irrigation marked improvement took place. The temperature fell several degrees, the pulse, which was from 140 to 150, and dicrotic, became strong, regular and reduced to 120 to 125 per minute, the nervousness abated, tremor and subsultus tendinum subsided. This treatment was continued until the twenty-fifth day, when defervescence set in and the patient progressed to complete recovery.

Case 2.—Appendicitis; male, aged 45 years. Patient had just arrived from New York City, where he had a similar attack, which kept him in bed for five days. Having recovered, he attended to his business affairs and then started back to this city, but was seized on the train. When seen he was suffering very acutely, knees drawn up, anxious countenance, clammy sweat, temperature 100 F., pulse 90; exquisite tenderness over McBurney's point and continuous vomiting. Several small doses—¼ grain—of calomel were given, followed by a Seidlitz powder, ice to abdomen and high irrigation of the bowel with one-half gallon of water and soap at 40 F. After the intestinal tract was thoroughly cleared out by two more similar injections, at intervals of twelve hours each, the pain ceased, temperature and pulse became normal, and all further symptoms disappeared. The patient was under observation for three months after the attack and has since been in perfect health.

Case 3.—Appendicitis; male, aged 40 years. Was suddenly taken with violent pain in abdomen, especially pronounced over McBurney's point. Temperature 99.8 F., pulse 90. He presented all the symptoms of Case 2, but was seen several hours earlier in the attack. The same treatment was given and he recovered completely, and has been well since.

In each of the above cases surgical interference was considered; in the first case for impending perforation, in the latter, for the most opportune time to operate, but each improved at the most critical stage, which can only be attributed to the free irrigation of the colon.

BIBLIOGRAPHY.

1. Turck, Fenton B.: The Journal A. M. A., 1900, xxxiv, p. 1089.
2. Love, I. N.: Ibid., p. 1.
3. Shuell, T. J.: N. Y. M. J., 1893, lviii, p. 255.
4. Hensell: Allgemein. Med. Centr. Zeit., Berl., 1896, lxv, p. 897.
5. Löwenthal, Hugo: Berl. Klin. Wochenschr., 1886, xxiii, p. 139.

DISCUSSION.

Dr. Daniel R. Brower, Chicago, said that too little attention has been given by the profession to colonic flushing. He, personally, very much prefers the normal saline solution to soap and water, or anything else which has been proposed for this purpose. The solution should be about the temperature of the intestinal tract. Not only does this flushing have a very great effect on the contents of the colon, but there is also a very prompt and remarkably active effect on the renal organs. In cases where the kidneys are deficient, as in certain infectious diseases, a large amount of saline solution thrown into the bowels will very speedily set up action of the kidneys. It is diuretic as well as antiseptic in its relation to the colon, and this feature is often overlooked. He is quite sure that this therapeutic measure is not resorted to as often as it should be.

Dr. O. T. Osborne, New Haven, Conn., approved of the recommendation of colonic flushing and said that it is not resorted to as often as it should be by surgeons after operations. Some make it a routine practice to inject 1 to 2 quarts of saline solution, but many others do not. The condition of surgical shock is due to paralysis of the vasomotor system, and in that condition the heart gets very weak, because the ventricles are not properly filled. The moment the blood-tension goes down, that moment the heart is impaired in its action. Flushing the colon fills the blood-vessels at a time when we know it will take several hours before anything can be absorbed from the stomach owing to nausea and vomiting, also during this period very concentrated urine is passed. This condition threatens kidney congestion and will be overcome by colonic flushing with normal salt solution.

Dr. J. C. Culbertson, Cincinnati, Ohio, said that as a means of reducing temperature, flushing of the colon with cold water, in infectious diseases, is one of our best remedial expedients. A quart of ordinary ice water will reduce the temperature 1.5 degrees in a case of fever—say 103 F.—if thrown into the rectum and retained there, and it can be repeated as often as thought necessary. It is a very valuable resource, it can do no possible harm and is a source of comfort to the patient.

Dr. M. Bernheim, Philadelphia, said that in the paper read yesterday he had shown, by physiologic experiment, that following an injection of the salt solution there is an antiperistaltic action set up which carries the solution up into the higher part of the small intestine and also into the stomach. Therefore the beneficial action of the large injections of saline solution is more easily understood, as the surface for absorption becomes larger.

Dr. G. J. Lochboehler said that as regards temperature the use of ice water is often very beneficial, but in both of these cases he has used the injection at 40 F, which is sufficient to reduce temperature. He wished to call attention to the fact that the injection of ice water in the case of hemorrhage reported, with a temperature of 105 F., and about to die, was done as the best method of causing reaction, and he firmly believes that the patient was saved by checking the hemorrhage by the stimulating effect of the injection of cold water. But, as he already mentioned, the saline solution given at the body temperature will aid in a great many cases in aborting infection and infectious disease.

A PROTEST AGAINST THE USE OF PROPRIETARY REMEDIES.[*]

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CHICAGO.

The profession is being overwhelmed by proprietary remedies. The manufacturers who project them copyright the name by which they are to be known, patent the process by which they are made, and patent the resulting product, so that these remedies must remain a monopoly for all time. Coblentz, in his recent edition of "Newer Remedies," gives a succinct account of about two thousand, all introduced during the last few years, and Lehn and Fink, in "Progress in Pharmacy and Therapeutics," enumerate about five hundred more.

I have recently had three of the leading dispensing druggists of Chicago, Messrs. Gale & Blocki, Dale & Sempill, and D. R. Dyche & Co., examine the last 1000 prescriptions on their files for the purpose of ascertaining how many of them contained these proprietary remedies, with the result that one firm finds about 20 per cent., another 21 per cent., and the third 26 per cent.

The most of these products are made in German color factories, as by-products; they are covered with this triple system of patents, and sold at an enormous profit in this country—I am told three or four times the price charged elsewhere. The therapeutic use of most of them is based on *ex parte* evidence; they are presented to us by expert promoters, with an abundance of literature, in which the effort is made to demonstrate that they are a positive cure for this or for that. The enormous production of these articles, and their extensive consumption, show a deplorable state of therapeutic morals, and the time has come, in my opinion, to protest against them.

These enterprising manufacturers and their accomplished agents, of course, have no use for the Code of Ethics and the traditions of the profession from the time of Hippocrates until to-day.

The Code of Ethics, Section 5, reads as follows:

> SECTION 5.—Equally derogatory to professional character is it for a physician to hold a patent for any surgical instrument or medicine, or to dispense a secret *nostrum*, whether it be the composition or exclusive property of himself or others. For, if such a nostrum be of real efficacy, any concealment regarding it is inconsistent with beneficence and professional liberality; and if mystery alone give it value and importance, such craft implies either disgraceful ignorance or fraudulent avarice. It is also reprehensible for physicians to give certificates attesting the efficacy of patent or secret medicines, or in any way to promote the use of them.

Notwithstanding the objections of these people and some of the profession, it must be that the great majority of our craft are in full and unreserved sympathy with these declarations of the Code, and therefore unite with me in this protest, and beg a cessation of this wholesale use of these drugs that are so expensive to our clients, and have not been subjected to sufficient clinical observation or pharmacological experimentation as to justify their scientific use.

Even if the remedies may have been determined to be meritorious by exhaustive scientific examinations, so long as the name is copyrighted, the process of manufacture patented, and the resulting product patented, we are perpetually at the mercy of monopolists who may fix the price and vary the composition or purity as fancy may dictate.

I see no objection on the part of a manufacturing chemist patenting a process. This is probably his right, and at best is but a limited affair, but when you add the other attachments you perpetuate it as a monopoly, to the great injury of scientific medicine, and to the detriment of our clients.

In the name of scientific pharmacy and rational therapeutics, I most earnestly protest against the present tendencies. We certainly have in our armamentarium enough well-tried remedies that have been subjected to thoroughly unbiased and carefully conducted physiological tests, and have had the ordeal of scientific clinical application, to enable us to fulfill the mission intrusted to us.

The national formulary has been of much aid to us; instead of prescribing "bromidia," we can at one-third the expense order liquor chloralis et potassii bromidi compositus; instead of "arsenauro," we can prescribe liquor auri et arsenii bromidi, and instead of antikamnia we can order pulvis acetanilidi compositus, and so with numerous other of these proprietary articles.

In conclusion, may I express the hope that this Section of the ASSOCIATION may call its members back to a more conservative prescribing, and issue its protest against the impetuous rushing after new and untried remedies. And, furthermore, that this great ASSOCIATION may use its mighty power to have our patent laws so modified that the present system of triple patenting of products made for the healing of the people may no longer be possible.

DISCUSSION.

DR. N. S. DAVIS, JR., Chicago, said that the lecturer had brought before the Section a subject which was of great interest, but especially so at the present time, because the Pharmacopeia is now in the hands of the revision committee. Two classes of proprietary remedies have been mentioned: 1. those combinations of drugs which are put on the market by their proprietors by skilful advertising, and 2, all those definite chemical products whose mode of manufacture is patented. As medical men, we must necessarily object to the patenting of articles which must be used for the benefit of the sick. At the present time many medicines are furnished to the medical profession which are not mixtures, but definite chemical compounds made by patented chemical processes. They are articles which the pharmacist could not duplicate were he called on to do so. These preparations are extensively used. Many of them have valuable medicinal properties. They will not be discarded by the profession because they have such properties. He would, however, discourage the use of mixtures, pills and tablets which are ready-made. We should adapt our prescription to the needs of the individual case, and this can not be done if we use ready-made mixtures or pills. He therefore agreed with the lecturer in his opposition to such protected pharmaceutical compounds, but, at the same time, he thought that we must continue to use some things which are covered by patent.

DR. J. M. ALLEN, Liberty, Mo., said that the paper of Dr. Brower directed attention very pointedly to one fact, viz., that the use of this class of remedies is becoming very general all over the country. The effects of the use of ready-made pharmaceutical compounds by physicians would be: 1, to lessen their study of materia medica and pharmacy; 2, to lead in the direction of routinism, thereby arresting growth and investigation. He had never used a formula in his life and always advises his students never to use them, but to study carefully materia medica and pharmacy, then formulate their prescriptions as a force to combat the etiologic and pathologic forces of disease. If the physician will do this, he can have his prescriptions filled as accurately and elegantly in almost every little town in the country, as the so-called manufacturer of drugs can do it. He does not believe that it is wise or beneficial to the physician to dispense his own drugs. His time is too valuable. Besides, the pharmacists of the country are now educated gentlemen. He should send his prescription to a druggist as a distinct department in the practice of medicine. The physician should place himself in close communication with a pharmacist so that they will be of mutual assistance to each other. He has derived great benefit from this close relation, always finding them ready to render any assistance asked.

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DR. A. BERNHEIM, Philadelphia, said that he had no connection with any manufacturing pharmaceutical business. He merely spoke to correct the statement that the cost of many medicines is much greater in this country than in Europe. For instance, antipyrin costs 5 to 6 marks per ounce in Germany, which is more than it sells for in this country. Moreover, these products are not recommended indiscriminately for everything, but they are carefully tested by clinicians, the most celebrated doctors in Germany, and only if they have been found to be very good are they put on the market. Of antipyrin he has frequently given and himself taken thirty grains, but he would not take ten grains of acetanilid. Of the names mentioned by the reader of the paper, antipyrin is also known as phenazon, an abbreviation of phenyldimethyl-pyrazolon, tannoform is only improved tannin preparation. We should not condemn patented articles as a class. The term "patent" comes from the Latin word which means "open," it is not concealed. It is very different with the class of pharmaceuticals of unknown composition where you never know what is in the compound, or what it will do. He personally had never prescribed any compressed tablet or proprietary secret medicine.

DR. A. B. LYONS, Detroit, Mich., agreed with all that he had heard of the paper. In regard to pharmaceutical compounds and patented drugs, he said that there is no unmixed evil in the world, and in attempting to eradicate some evil we should be careful that we do not take away something good with it. This is exemplified in the subject discussed in the paper. We associate the name of patent with things which should not be patented, and could not be. If an article had no novelty it could not be patented. He is heartily in favor of patenting preparations or discoveries by scientific men, if they could be, because the knowledge would thus be given to the world and it would increase the resources of science. He is, on the contrary, opposed to proprietary pharmaceutical compounds. If a man puts together two or three articles well known to the profession, on what ground can he claim the exclusive right to manufacture the combination? "None genuine without Smith's signature" means quackery every time in pharmacy. He was very much pleased with the remarks of Dr. Allen about students and the relation of pharmacists to the medical profession, and the overwhelming of the profession by commercialism. There are two classes of men who are now especially interested in selling medicines; the question is which class will physicians encourage, those who offer only a few remedies which they alone can supply, or those who aim to carry out the personal wishes of the physician in the preparations prescribed and deal in all medicines, and who seek to preserve the pharmaceutical profession.

DR. G. J. LOCHBOEHLER, Washington, D. C., said that we ought not to use prepared remedies, for in a great many cases they are not what they claim to be. Take, for instance, the emulsion of cod-liver oil. Professor Wiley, two years ago, analyzed all the emulsions in the market. Most of these are claimed to contain 50 per cent. of oil. Dr. Wiley found that, of all the samples, only three contained 50 per cent., most of them containing only 15 per cent., some only 3 per cent., and several none at all. There is a firm that puts up a preparation of cod-liver oil whose agent tells you that it contains everything that cod-liver oil should possess except the fat. It is free from the taste of cod-liver oil because it has *no cod-liver oil* in it. The taste of cod-liver oil can not be eliminated. But why use it? Why not use butter, cream and the fats of the daily food? Why not use the well-known remedies of the pharmacopeia instead of prescribing new, and possibly dangerous, compounds? A child went into a drug store and complained of headache; the druggist gave her five grains of antipyrin and she died in ten minutes. The coroner decided that the child died with cerebrospinal meningitis.

DR. TOMPKINS condemned the presumption of faith-curists and the practice of medicine by so-called ministers, who assume to know more about medicine than physicians. He mentioned a case of a young woman dying of consumption, who was taken out of the hands of the doctors by a bishop. but she died just the same.

DR. FRANK WOODBURY, Philadelphia, suggested that the manufacturing pharmacists of the present day are better business men than those of the early part of the century, and that if quinin, morphin and strychnin and similar indispensable drugs had not been discovered until the present time they would undoubtedly be patented. so that we must expect that hereafter all new drugs would be introduced in this shape. The fact that a drug is manufactured according to a protected process, therefore, should not prevent its use. He would, however, urge that the well-known drugs should not be hastily laid aside in favor of new and expensive substitutes. Too great eagerness for new and comparatively untried drugs inspires mistrust on the part of the patient, and may engender a suspicion that he is being used for experiment. There is no doubt that the taking up of new remedies is often due to ignorance of the value of the old ones.

DR. LYONS said that each particular subject must be studied on its merits and by some competent authority. Reliable evidence is needed as to what each special article will do. It is necessary that some board be constituted which shall exercise a censorship over this whole class of remedies, and this board should have behind it the authority of the AMERICAN MEDICAL ASSOCIATION.

DR. D. R. BROWER said that a very pleasant gentleman came to his office recently and showed him a pharmaceutical compound and told him what it would do. From his office the gentleman evidently visited other physicians in the same building that afternoon. On the next day the speaker entered the drug store in the same building and inquired whether there had been any prescriptions for this compound, and found that six had prescribed it within twenty-four hours after the promoter had visited them, and perhaps there were more prescriptions taken to other drug stores. This is a great evil. The same compound is also sold directly to the public; its uses are printed on the label where the public can see it. So that prescribing such remedies encourages counter prescribing and self-treatment. With regard to antipyrin, it may be cheaper here than in Europe, but he doubted it. He knew that people living in Detroit have gone across to Canada to get their prescriptions for antipyrin filled because it is much cheaper there. These new remedies are being constantly forced upon the profession; there have been some 2500 brought out within recent years. The question is, what shall we do in the matter? It is a very important question for the profession to answer.

CULTIVATION OF THE ESTIVO-AUTUMNAL MALARIAL PARASITE IN THE MOSQUITO —ANOPHELES QUADRIMACULATA.*

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To determine this question my observations were carried on through the past winter and summer, the latter of which has been the warmest for thirty years. Previous to June, 1900, I had not discovered any specimens of anopheles here or in New Jersey, and but one specimen had been sent to me from Texas. In the previous fall I had treated a case of malarial fever in whose blood both crescents and ovoid bodies were found, which undoubtedly originated in Philadelphia,[1] and it was near this locality that my first efforts were made to capture adult anopheles or their larvæ. Periodic trips were made to this section during many weeks without avail, and I brought back only the larvæ of culex, chironomus and various other unknown larvæ.

About three-fourths of a mile distant from the house in which the case of fever had been treated, and near the League Island Navy Yard, on June 19, 1900, I managed to catch a small dark-brown or black and striped mosquito larva which agreed tolerably well with the description of Ross, in that "it lay upon the surface of the water like a stick and when disturbed would move off with a backward skating motion." Howard had subsequently[2] described the larvæ of anopheles as being "darker" than culex. Placing these larvæ, together with a small amount of algæ or green moss, in a glass jar, I succeeded in raising several to adult insects, which proved to be specimens of both anopheles quadrimaculata and anopheles punctipennis. Both of these species had therefore been caught in the same narrow and slowly flowing stream of fresh water which drained a marshy district formed by a railroad embankment.

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* A paper read and specimen presented—by invitation—before the College of Physicians of Philadelphia, Dec. 5, 1900.

After this I made periodic visits to this section from June 19 till Nov. 11, 1900, and never failed to catch anopheles larvæ, except on the last trip, when they had disappeared, probably on account of the cold weather. In this way I have raised upward of 200 adult anopheles from the larvæ, some of which have been kept as long as twenty-seven days.

Subsequently, making journeys to regions where cases of malarial fever had developed, I discovered that anopheles could nearly always (all but one) be found in or near the infected houses. In this way I have been able to locate five localities within the city limits of Philadelphia where anopheles have their breeding-grounds.

This, in a measure, confirms the observations of others that "where there is malarial fever, there are mosquitoes." But it does not necessarily follow that where there are mosquitoes there are cases of malarial fever. Anopheles will always remain uninfected unless some vertebrate animal suffering with the disease comes among them. I have been informed that no autochthonous case of malarial fever has developed at the League Island Navy Yard for years, though there is a breeding-ground of the anopheles near by. On Sept. 10, 1900, I caught some larvæ of anopheles in a clear pool of water in the Pocono Mountains of Pennsylvania, a notable health resort, and at an elevation of nearly 3000 feet above sea level. The adult insects in this region are doubtless not infected, simply because no case of malarial fever has been brought near them. Five miles north of this locality—Tobyhanna—malarial fever has been found and another breeding-ground may be expected to be found there.

The malarial parasite of man may be classified into a natural order (Gymnosporidia), a class (Sporozoa), into different genera (Hæmamœba and Laverania), into different species (hæmamœba malariæ, quartan; hæmamœba vivax, tertian, and hæmomenas præcox, remittent fever—Ross); and it has been further proved that the flagellated malarial parasites are of different sexes.

Two of the interesting questions at present attracting attention is, How does the human malarial parasite keep up its cycle of existence, and how does it gain admittance into the blood of man? Its survival of the winter may be explained by the well-known fact that the tendency of this disease is to relapse, sometimes years after supposed recovery. In this way a patient supposedly cured of malarial fever by insufficient doses of quinin taken during the previous fall, has a relapse the following spring, and he in turn becomes the medium by which the disease is distributed.

As to how the parasite gains admission into the blood, if one theoretically holds to the belief that the spores of malarial fever breed in swamps or marshy districts and that the "miasm" is taken into the system through the respiratory tract, it necessarily implies that the spores or miasm must first have developed in some intermediate host, that they pass out of this host to become dried, and that they are blown through the air to the respiratory mucous membrane. According to Ross,[3] it is not the parasite itself which springs from the marshy ground, but the carrier of the parasite. On the other hand, if one theoretically holds to the belief that malarial fever may be contracted through the medium of drinking water, it necessarily implies that the spores of the disease, or whatever it is, pass out of the intermediate host into the water, and that the infective material remains alive in this medium though exposed to continuous changing conditions, or that the intermediate host contained in the drinking water is taken into the stomach through the medium of the food or drink. Lastly, if one holds to the belief, which has been confirmed by proof, that malarial fever may be contracted through the bite of the mosquito, he should state how such a condition may or does occur.

The question of preventive measures depends on a proper conception of its exact etiology. Marchiafava and Bignami[4] have studied the complete biological cycle in all the different species of human malarial parasites and have succeeded in inoculating four individuals with malarial fever who voluntarily submitted themselves to such investigation. They have been led to the following conclusions: MacCallum, while watching a flagellated malarial parasite (gametocyte), observed that after a time a flagellum became detached from the parent body and made straight for another parasitic body, which it entered, thus causing impregnation. From this phenomenon it is believed that flagellated parasites are of different sexes. Adopting the zoological nomenclature to simplify matters, one finds that mature sexual elements are spoken of as gametes (such as the crescent of the estivo-autumnal and its homologues of the tertian and quartan parasites). The female elements are known as macrogametes; the cells producing male elements are called microgametocytes, and the male elements themselves, microgametes. During certain periods of development of the estivo-autumnal parasite and its homologues in the other species of malarial parasites, if the blood be withdrawn from the circulation and left standing on the stage of the microscope for a period of from fifteen to twenty minutes, certain of the crescentic bodies change into ovoids, some of which subsequently become converted into flagellated parasites. From the latter forms free flagella (microgametes) tear themselves loose and penetrate certain other ovoid bodies which had not previously developed flagella. By this process fecundation of the female ovoid form (macrogamete) occurs, after which it rapidly develops flagella and by means of its sharp extremities has the power of penetrating dense muscular tissue such as the middle intestine (stomach) of the mosquito, and on doing so, after a day or two becomes converted into the zygote. Within the latter bodies the spores or sporozoites develop, and about the seventh day rupture into the celom or body cavity of the mosquito; thence they are carried to the salivary glands to be poured out the moment the insect bites.

After becoming more familiar with the literature on this subject, I next endeavored to find out if the anopheles quadrimaculata found around Philadelphia was susceptible to infection from the malarial parasite. At this time the A. claviger of India and Africa had not been identified as our A. quadrimaculata by Howard.[5] The following observations are recorded:

Observation 1.—December, 1889. Blood contained ovoids and crescents. After a trial lasting several hours a specimen of culex would not bite. This was my first failure, which was repeated two days later.

Observation 2.—July, 1900. An adult patient whose blood contained two groups of tertian parasites, was bitten by two anopheles quadrimaculatæ. One of these escaped, the other died and was not dissected.

Observation 3.—July 20, 1900. Blood showed a large number of tertian parasites—double tertian—which were afterward stained by eosin and methylene blue, and by carbol-thionin. After a trial lasting from 8 p. m. to 11 p. m. a specimen of anopheles punctipennis would not bite. A culex pungens caught in the room bit the patient and was kept at a temperature of about 84 for 7 days and dissected, but was found not to have been infected.

Observation 4.—July 27, 1900. Blood contained two groups of tertian parasites, some of which were almost full grown. The patient was bitten by two anopheles quadrimaculatæ, which were kept at a temperature ranging from 76 to 80 F., for 7 days; they were not infected.

Observation 5.—August 7, 1900. This man had been suffering with a double tertian infection and his blood contained a large number of malarial parasites. He was bitten by an anopheles quadrimaculata two hours before a chill, and by three others about half an hour to within a few minutes of the chill. The anopheles were kept at a temperature ranging from 84 to 88 F. The one which bit first died on the third day, and two of the others died on the fifth day. The last one was kept for seven days. All of them were dissected but contained no zygotes.

Observation 6.—August 29, 1900. Blood contained a large number of tertian parasites in different periods of development, some full grown, others very small. The patient was bitten by three anopheles quadrimaculatæ, one of which was afterward kept at a temperature ranging from 80 to 84 for four days. It was dissected, but showed no pigmented cells or zygotes.

Observation 7.—August 31, 1900. Blood contained two groups of tertian parasites. This patient was bitten by two of the same anopheles which had previously bitten Case 6. They were kept same as No. 6 and dissected on September 2, but contained no zygotes.

Observation 8.—Date September 24, 1900. Blood contained two distinct groups of tertian parasites, some of which were almost full-grown and others in the stage of segmentation. Two and a half hours previous to the chill patient was bitten by three anopheles quadrimaculatæ, which were kept at a temperature ranging from 76 to 80 F. One died on the fourth day; the others were kept for five days. All were dissected, but contained no pigmented cells or coccidia.

Observation 9.—October 31, 1900.—A case of double tertian, in whose blood at 5 p. m. a very large number of full-grown and very active parasites were found, was bitten at 8.30 p. m. by two anopheles quadrimaculatæ, which were kept at 80 to 84 F. One died on the third day, the other was kept for five days. Both were dissected, but contained no pigmented cells.

Observation 10.—October 27, 1900. Blood showed a few ovoids and crescents. Patient was bitten by two anopheles quadrimaculatæ, which were kept at a temperature ranging from 76 to 84 for three days and dissected. Two zygotes near each other and containing black pigment granules were found near the lower portion of the middle intestine of one mosquito.

I also made several trips to the houses where cases of malarial fever were being treated, and in every instance but one succeeded in catching anopheles quadrimaculatæ.

In this connection I must note that in many instances the patients explained to me that mosquitoes had not been troublesome, and some had not seen any at all. However, after searching through the house, anopheles were caught. This is easily explained, since patients have very frequently told me they could feel nothing, although at the time I could see the anopheles biting. These latter mosquitoes were afterward dissected, but contained no zygotes. Other anopheles were caught in barns in a district where a large number of cases of malarial fever had occurred, but none of these were infected.

In all of the cases here reported of malarial fever, parasites were found. Most of them were discovered in the fresh blood, but a large number were afterward stained, some with eosin and methylene blue, others with carbol-thionin, some with eosin and hematoxylin, and some by the Romanowsky method.

To recapitulate: Of 10 cases of malarial fever, 7 of them were bitten by 16 anopheles quadrimaculatæ and one by a specimen of culex, and in this series only one anopheles was infected (Case 10). I can only explain the cause of my failure to cultivate the zygotes in the majority of anopheles on the ground that but one of the cases probably contained the preflagellate forms of the malarial parasites at the time the anopheles bit (which confirms the results obtained by others), or else that the insects were not in a condition necessary for infection. (See note.)

The season was now drawing to a close, and after fourteen months of work, as good fortune would have it, the following interesting case, which is the last of the series, was very kindly placed at my disposal by Dr. Frederick A. Packard, visiting physician to the Pennsylvania Hospital of Philadelphia:

Observation 11.—The patient, white, aged 50, was admitted to the Pennsylvania Hospital, Oct. 31. 1900, suffering with estivo-autumnal malarial fever—H. præcox.

Examination of the Blood.—At 7:30 p.m., Nov. 1, 1900, a drop of blood was removed from the tip of the finger and was at once examined with a 1/12 oil-immersion lens (Leitz). Ovoids and crescentic malarial parasites (gamete-forms) were found, some of the latter being intracorpuscular and moving. Many of the ovoids contained a very large amount of reddish pigment, which for the most part was arranged around the periphery. In other ovoids from the center could be seen a small projection or rounded arm which moved outward toward the periphery. After about twenty minutes a flagellated malarial parasite was found. It was deeply pigmented and possessed about five long arms, which waved about quite rapidly. At the tip of one of these flagella there was a small particle of a red cell attached which was tossed around in all directions. Blood films were afterward selected and stained by eosin and methylene blue, by eosin and hematoxylin, by carbol-thionin, and by the Romanowsky method. They all showed ovoids and crescents. Following Manson's method, with some modifications, I succeeded in staining a flagellated malarial parasite by the Romanowsky method. Flagellated parasites appeared to be few in number, which may account for only one positive result. As soon as the flagellated parasite was discovered, a specimen of anopheles quadrimaculata was applied, which bit the patient. Six others subsequently bit. The mosquitoes, after biting, were kept in a warm locality for a period of probably one hour, and were afterward placed in a box and kept at an average temperature of 78 F. One of these anopheles was dissected on November 5 at 11 a.m.; it was not infected. Two others were dissected at 4 p.m., November 5; one was not infected, while another contained near the lower portion of the middle intestine 4 zygotes in different stages of development, which is characteristic of these bodies. (See plate.) Another was dissected November 7, and was not infected, while still another was kept thirteen days, but nothing was found. Two of the insects escaped.

While this anopheles probably only bit once, on Thursday at 8 to 9 p.m., and was dissected at 4 p.m. on the Monday following, the specimen of middle intestine evidently shows the zygotes of estivo-autumnal malarial fever in different stages of development; No. 1 is a very young form, resembling in contour and general appearances the ovoid body seen in the blood, while specimen No. 4 is of a later period of development. Specimen No. 2 resembles very much the crescent parasite of the fresh blood, thus evidently showing the powers of the zygote to preserve its original type.

The most distinguishing characteristics of the coccidia of this type of fever which serve as its means of identification are: 1, the presence of reddish pigment-granules similar in color but larger than that seen in the malarial parasite of the blood. The pigment, too, is arranged around the periphery of the zygote; 2, the zygote of this stage has a very thin and hyalin capsule around the periphery; and 3, the distinctness of this pigmented cell. By this means I was able to identify these bodies, though much assistance had been afforded me by a specimen of middle intestine infected with the zygotes of proteosoma Labbé and loaned through the kindness of Dr. Ronald Ross.

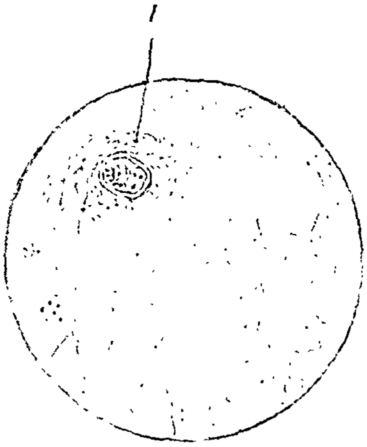


Fig. 1.—Ovoid-shaped zygote of an early stage of development about 8 to 10 microns in diameter, and containing numerous reddish pigment-granules and vacuoles.

*Nothing can be determined by a macroscopic examination of the infected middle intestine of the anopheles. It still possesses its light brownish tint. With a No. 3 ocular and No. 7 objective (Leitz) the zygotes Nos. 1, 2, 3 and 4 become quite clear and the reddish pigment dotlets have a brilliant tint. The rest of the body of the coccidia has a bright hyalin appearance, and in areas adjacent to the pigment a more or less granular appearance is observed. The general outline and finer characteristics of the coccidia are to be determined by a No. 3 ocular, and 1/12 oil-immersion lens.

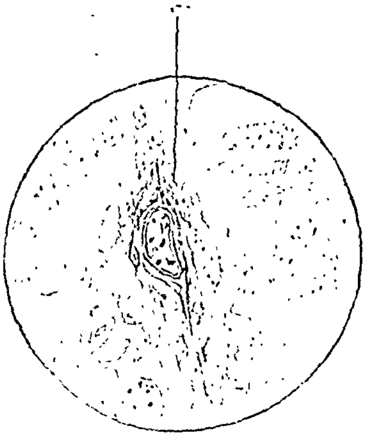


Fig. 2.—Crescent-shaped zygote, containing numerous reddish pigment-granules and pushing aside muscle fibers. Pigment-granules are of larger size than in No. 1, and pressed toward the periphery. About 7 microns in width, and 14 to 16 microns in length.

Zygote No. 1.—This coccidium has the general characteristics of the ovoid body of the estivo-autumnal parasite seen in the fresh blood, with the exception that in the zygote the pigment granules are slightly larger and appear to be pushed outward toward the periphery of the cell. That portion of the cell body in which no pigment is observed has the faintest yellowish tint. The zygote possesses a very thin and hyalin capsule. The entire body stands out prominently from the surrounding cells. This specimen is located in the lower portion of the middle intestine and is external to the epithelial cells. It is slightly larger—8-10 microns—than a red blood-cell.

Zygote No. 2.—While the former coccidium was situated outward and external to the epithelial cells, this specimen selected a position among the muscular tissues, which it presses to either side. In shape it corresponds to the crescent of the fresh blood. It has a faintly yellowish and hyalin tint and around the periphery the brilliant reddish pigment granules are disposed. The granules are fewer in number than in the crescent parasite and are larger, looking as though there might have been a coalescence of these particles of destroyed hemoglobin. A faint colorless area—vacuole—surrounds each pigment granule and a more or less elongated slit-like vacuole is seen in the center, but any attempt to draw these only exaggerates their appearance. A very delicate and hyalin capsule surrounds the coccidium. The entire body has a stamped-out appearance and is very distinct. It is probably 7 microns in width and 14 to 16 in length.

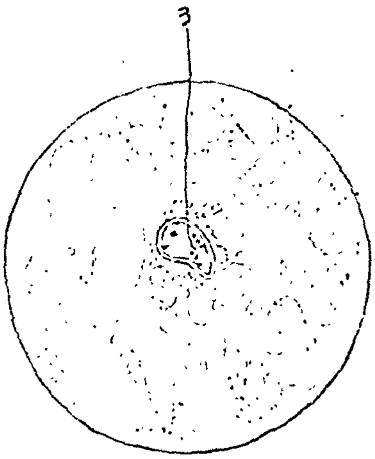


Fig. 3.—Vesicular-shaped zygote, containing bright reddish pigment-granules and slit-like vacuoles. The body of the coccidium has a faint yellowish tint. It is about 10 microns in diameter and 14 to 16 in length.

Zygote No. 3.—This coccidium is the lowermost of all, being located near the middle intestine, which gives origin to the Malpighian tubes. It has a more or less elongated crescent shape and is probably of a somewhat later stage of development than the former two coccidia. It is situated external to the epithelial cells, and is adjacent to a spiracle—same a-

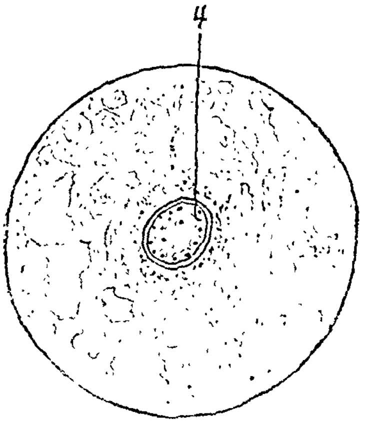
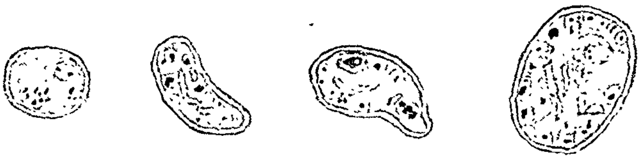


Fig. 4.—More or less ovoid-shaped coccidium, containing numerous reddish pigment-granules, which are distributed around the periphery. Numerous slit-like vacuoles are shown. Zygote about 12 to 14 microns in diameter, and 16 to 20 in length.



Description: Four zygotes (unstained) of estivo-autumnal malarial parasite (observation xi) in different stages of development, and found in lower portion of middle intestine of anopheles quadrimaculata (or claviger). No. 3 ocular and 1-12 oil-immersion lens (Leitz). The mosquito bit on Thursday, 8-9 p. m., and was dissected on the following Monday at 4 p. m. (November 5, 1900).

No. 1. This zygote also contains reddish pigment granules, some of which are two or three times as large as those seen in No. 1. Faint vacuoles surround each pigment granule and a few slit-like vacuoles are contained in the body of the coccidium. The central area has the slightest yellowish tint. Its outline is sharply defined on account of the hyalin capsule which surrounds it. This zygote is about 10 microns in width, and 14 to 16 microns in length.

Zygote No. 4.—This coccidium has a flattened and ovoid shape, and is the largest of all. It can be readily studied with a 1/7 in. objective. It is also located in the region of the Malpighian tubes and is somewhat external to the deeper epithelial cells. It has a faint hyalin capsule, and bright reddish pigment granules of different sizes and shapes are disposed around the periphery of the body. Some of these are three or four times the size of the pigment granules of the H. præcox of the fresh blood. Certain portions of the inner lining of this coccidium have a more or less thickened appearance, and toward the center a few slit-like vacuoles are observed. Faint vacuoles surround each pigment granule. The central area of this zygote has a faint yellowish tint though the general appearance as in all the others is hyalin. It has a stamped-out appearance and is very distinct. All these characteristics are brought out by focusing up and down. In length this coccidium is probably two and a half times the diameter of a red blood-cell —16 to 20 microns—and is probably 12 to 14 microns in diameter. The general characteristics of the zygotes are best studied with the iris diaphragm about one-half open.

I wish to tender sincere thanks first to Dr. Frederick A. Packard for his kindness in placing this case for study at my disposal; next to Prof. Simon Flexner, of the University of Pennsylvania, who has placed at my service the facilities of his private laboratory for research work; and to the following named, who have given me the opportunity of studying cases of malarial fever, namely: Drs. J. C. Wilson, W. C. Hollopeter, M. T. Prendergast, J. M. Cruice, N. D. Pontius, Frank White, Julius Salinger, A. P. Francine, and George W. Norris; and to the Sisters of St. Joseph's Hospital for favors. To Dr. Ronald Ross I am greatly indebted for an examination of one of his specimens, and for his literature, which has been invaluable in identifying the coccidia herewith presented, and to your president, Dr. W. W. Keen, I must thank for his kind invitation to speak to you this evening.

This specimen presented is, I believe, the second one reported in America, the first one having been made by Dr. W. S. Thayer.

Note: After submitting this article for publication I read —Report of the Malaria Expedition to Africa, Liverpool School Tropical Medicine, Memoir No. 2, 1900; Ross, *Annett*, Austen, Giles, and Fielding-Ould—that in order for the zygotes to develop, the insects must as a rule first have obtained a meal of blood or must first have been fertilized. *In my first few observations* the anopheles were raised from larvæ, while in the last two instances adult mosquitoes were used.

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BIBLIOGRAPHY.

1. Philadelphia Medical Journal, April 14, 1900.
2. Address delivered by Dr. L. O. Howard, before the American Medical Association, June 5-8, 1900.
3. Discourse delivered by Dr. Ronald Ross, before the Royal Institute of Great Britain, March 2, 1900.
4. Twentieth Century Practice of Medicine, Vol. xix, 1900.
5. *Notes on* the Mosquitoes of the United States, by Dr. L. O. Howard, United States Dept. of Agriculture. Bulletin 25, New Series, 1900.

Xanthoma Multiplex.—Dr. William Osler recently exhibited, at his public clinic, two cases of that rare affection, xanthoma multiplex, *the first* observed at the hospital. Both were in women, aged 30, and both had jaundice, one of ten and the other of two years' standing. Each had suffered from recurrent attacks of pain, vomiting, chill, fever and sweats, followed by increase of jaundice. There was not much loss of flesh.

AN ORIGINAL CHART OF THE NEURONIC ARCHITECTURE OF THE VISUAL APPARATUS.

WITH EXPLANATION.

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Having been deeply impressed by the study of the recent work of Dr. St. Bernheim, of Vienna, on "The Nuclear Origin of the Ocular Nerves and Their Connection With the Cortex of the Brain,"[1] and no comprehensive diagram being appended from which a general conception of this intricate mechanism could be gleaned, the idea was conceived of preparing a chart which would retain as far as possible anatomic relations, and at the same time bring graphically before the eye the neuronic architecture of the visual apparatus. In so doing Bernheim's text has been strictly adhered to. Bernheim's investigations extend over many years, and have been followed in various directions, namely by anatomic studies of the brains of young infants and embryoes, experiments on animals, biologic studies, the study of pathologic conditions in man, both clinically and subsequently on the anatomic specimens, and these studies have been further confirmed by physiologic experiments on monkeys, and pathologic conditions induced and subsequently traced and studied. The nerve fibers were traced by the Weigert stain, whereas their origin and *final* endings have been disclosed by the Golgi stain. These methods have been supplemented by artificial and naturally produced degenerations according to the Marchi method and that of Nissl.

This chart represents an entire cross-section of the brain, made on a level with the optic thalami; the temporal and frontal lobes have been cut away, as also the cerebellum, thus exposing pons and medulla. The eyeballs, optic nerves, chiasm and optic tracts have been sketched, showing the manner in which the tracts embrace the peduncles and then turn upward and inward to distribute their fibers to the primary optic centers, *namely, the external* geniculate bodies, the optic thalami and the anterior corpora quadrigemina, where they split up into fine dendrites which are in apposition with dendrites given off by the large ganglion cells in these primary optic centers. In their turn these ganglion cells send out dendrons, which are distributed to the visual centers *in the cortex* of the occipital lobes, where conscious vision is aroused; others go to portions of the occipital lobes where not only vision is aroused by contact with cortical cells, but these cortical cells give off dendrons which run to the motor cortical areas—visual association fibers. From the motor cortical areas the cortical cells send long fibers through the peduncles under the floor of the third and fourth ventricle to the motor ocular nuclei of the opposite side, thus inducing *movements of the* eyeballs or, passing downward in the cord, lead to movements of the hand and foot. But there is also a more direct connection between the optic nerve and the motor ocular nerves. Some *of the* fibers which pass down the optic tracts pass directly to the centers for the sphincter of the pupil and accommodation, thus producing the *short reflex arc* and through means of which all the other motor ocular nerves, third and fourth, are brought into communication with the optic nerve. But the sixth nerve is far removed from these centers and this, as well as all the other cranial motor nerves, and even sensory impulses from without, are communicated by means of the posterior longitudinal bundle, which carries both centripetal and centrifugal fibers. Hence, the *motor* nerves of the eye can be aroused to action, 1, as a result of impulses derived from the motor areas of the cortex; 2, through the short reflex arc which exists between the optic nerve and the centers of the pupil and accommodation; 3, through the posterior longitudinal bundle, which connects not only the various motor nerves, but likewise carries sensory impulses from without, it being made up of both centripetal and centrifugal fibers.

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[1] Graefe-Saemisch Handbuch d. gesamt. Augenheilkunde, 1900. II. 15 u. 16.

The Retina is essentially made up of three distinct neurons: 1, the rods and cones, which are stimulated into action by the chemical action of light on the visual purple; 2, an intermediary cell, and 3, the large ganglion cells, which send their fibers isolated and direct to the primary optic centers carrying centripetal impulses —a few *centrifugal fibers* have been traced from the various primary centers and some have been observed in the cortical areas, but so little is known regarding them that they will receive no further attention here.

All these fibers derived from the ganglionic cells converge to a common area, the disc, and here form bundles of fibers which, after passing through the lamina cribrosa take on their myelin sheaths, forming the optic nerve, which passes backward through the optic foramen to the optic chiasm, where a partial decussation of fibers takes place.

The decussation has been the subject of much discussion and investigation. Bernheim finally declares that the fibers located dorsally, that is, nearest the brain, are uncrossed, whereas those ventrally placed—nearest the bony base—are crossed fibers. In the optic nerve these fibers are differently placed, depending on the portion of the nerve examined. Close to the disc, crossed fibers are found in the median and temporal parts; uncrossed fibers are found above and below; the macular bundle occupies the temporal quadrant, being made up of crossed and uncrossed fibers. About the middle third of the optic nerve, the crossed fibers occupy a section from above and to the temporal side downward and inward; the macular bundle occupies a central position in the nerve. At the optic foramen, the crossed fibers occupy almost in a vertical line the median half, the uncrossed the temporal half. In the chiasm, the uncrossed are above, the crossed fibers below. In the optic tracts, the crossed and uncrossed fibers, peripheral and macular, are dispersed equally, and the bundle arrangement is entirely lost. At the disc the macular bundle lies to the temporal side; in the optic nerve it is centrally located, whereas in the chiasm it is wedge-shaped, crossed fibers below, uncrossed above and in the tract its fibers are thoroughly mixed with all the others.

The optic tracts diverge in a wide circle, pass under the peduncles of the brain and become flattened, and embrace the peduncles, pass upward and inward to be distributed to the primary optic centers. Where the tracts turn to bend upward a longitudinal furrow appears, which divides the tract into a median and a more lateral portion. The lateral portion of the tract is lost in the corpus geniculatum externum and the optic thalamus, whereas the median branch goes through the corpus geniculatum medial to the anterior corpora quadrigemina.

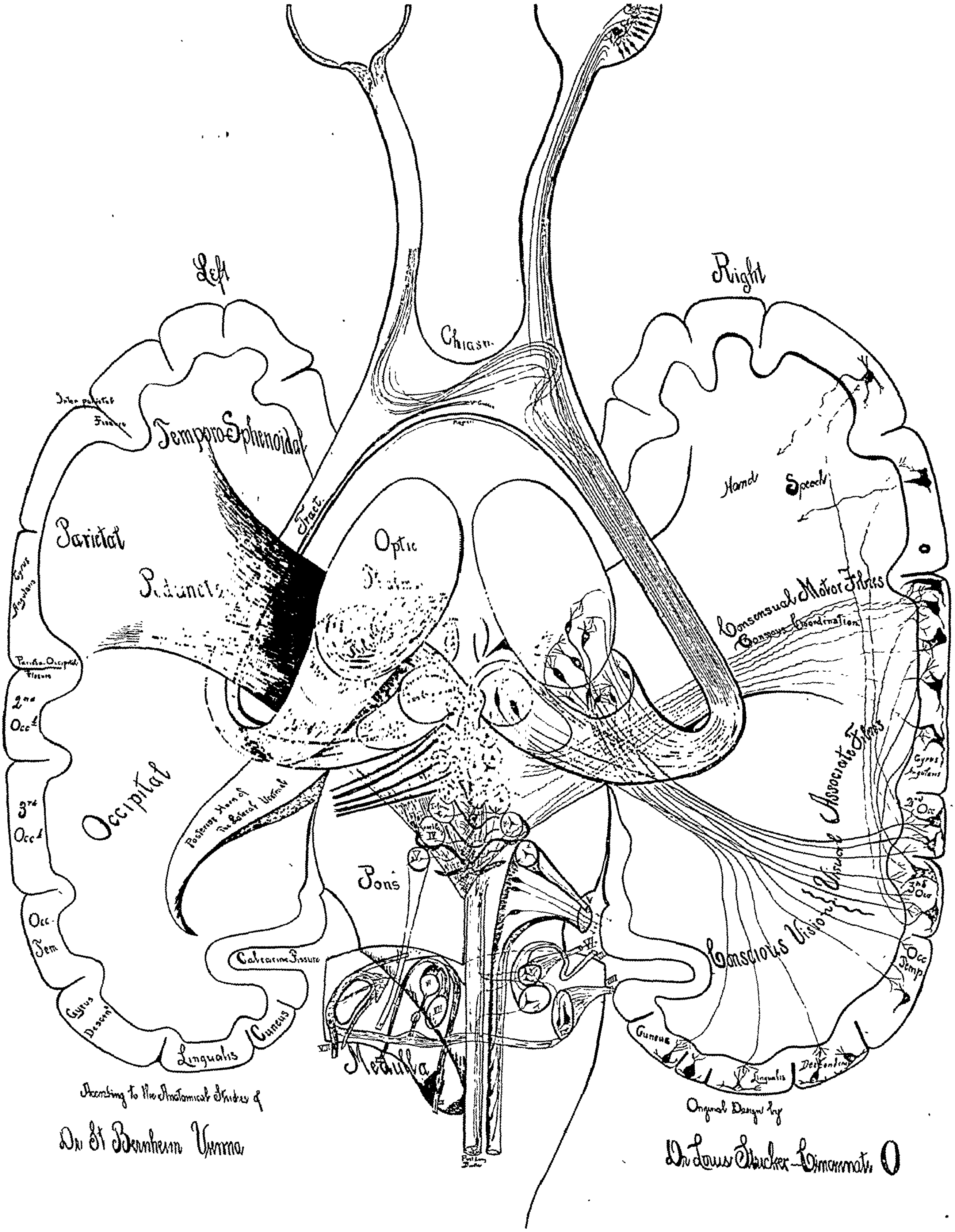
In the optic nerve are found only fibers which are intended for the visual act and those which produce pupilary reflexes. In the chiasm a bundle of fibers is found—persisting in degenerative processes—which has nothing to do with sight. These fibers run from the internal geniculate body of one side along the inner side of the tract, through the dorsal side of the chiasm, to occupy the same position in the opposite tract and internal geniculate body. Some of these fibers extend under the anterior corpora quadrigemina to the corpus Luysii, a small nucleus anterior to the nuclei of the third nerve and to either side of the optic thalami. This bundle of fibers is known as von Gudden's commissura, and its exact nature is unknown, as is also the use of the fibers which go to the corpus Luysii. Some few of the fibers extend into the posterior quadrigemina, and in this manner are brought into relation with the sense of hearing. Hannover's fibers, found partly at the anterior, partly at the posterior surface of the chiasm, are not in any way connected with the body of the chiasm. Meynert's fibers lie parallel to the posterior arc of the chiasm, are not incorporated in the nerve proper, and are not anatomically considered a part of the chiasm.

Bernheim states that in the chiasm some of the fibers split, one branch going to either side; likewise anastomoses take place; further, that fibers of different caliber exist, one to produce impressions of sight, the other to cause reaction of the pupils. Anatomically no difference exists between crossed and uncrossed fibers. In the tract the fibers are arranged regularly, one next to the other, until they reach the bend and the fibers ascend to reach the primary optic centers. Fully 70 per cent. of all the fibers enter the external geniculate body, and all the macular fibers are supposed to be included here. The external geniculate body is made up of alternate layers of white and gray substance. In the gray substance are found multipolar cells closely matted together, between which the fibrils, radiating fan-shaped, end. These fibrils are the true optic-nerve fibrils, both crossed and uncrossed, of practically equal proportions. Another set of fibrils pass around and under the edge of the external geniculate body and pass over on to the surface of the anterior corpora quadrigemina. Still others take a course backward and downward and then forward to get beneath the surface of the aqueduct of Sylvius. These are both crossed and uncrossed fibers and intended to produce the pupilary reflexes.

Of those fibers which enter the optic thalamus, the main body passes under the external geniculate body and into the pulvinar, and can be followed as far as the stratum zonal. Other fibers pass between the two geniculate bodies, especially around and through the geniculate body medial to the deep portions of the thalamus, ending in the pulvinar and designated as the deep thalamus fibers of the optic nerve in contradistinction to the superficial, which pass through the corpus geniculatum medial and anterior corpora quadrigemina. Bernheim asserts that no fibers end in the corpus geniculatum medial; hence this body has nothing to do with sight.

The Oculomotorius or Third Nerve.—Seated in the floor of the third ventricle occupying an area equal to and situated just beneath the anterior corpora quadrigemina, are the nuclear centers for the third nerve. In the drawing, owing to the impossibility of otherwise displaying the individual nuclei, this area has been greatly exaggerated. The entire mass of nuclei occupies the space to either side of the median raphe, and are arranged so as to form a concavity laterally to either side. In a frontal section, the edges would converge ventrally whereas they would diverge dorsally, and the posterior

THE NEURONIC ARCHITECTURE OF THE VISUAL APPARATUS.



According to the Anatomical Studies of

Dr St Bernheim Vienna

Original Design by

Dr Louis Stricker Cincinnati O

DIAGRAMMATIC.

longitudinal bundle would occupy a space ventrally and laterally.

Strictly speaking, there are no distinct lines of demarcation between the various nuclei which supply the fibers for individual muscles. The nuclei gradually merge one into the other. Aside from the large motor ganglion cells, one finds numerous small round cells which are the intermediary link by means of which the motor ganglion cells of the nuclei are brought in contact. The same is true of the nuclei on opposite sides of the median raphe. The motor cells do not send commissural fibers across the median raphe, but contact of dendrons through the medium of the round cells has been established. The fact that some of the nuclei send their fibers, or a part, to the opposite side has given rise to the belief that a commissura existed.

Lying within the proximal end of the nuclear region are two nuclei made up of smaller ganglion cells than the other nuclei, and known as the small-celled nuclei, and identical with the Westphal-Edinger nuclei. Seated below this, occupying a central position, spindle-formed in shape, containing large ganglion cells, lies a single nucleus. It is sharply defined from the lateral nuclei, its dorsal edge lies within the limit of the lower edges of the two small-celled nuclei, whereas fine dendrites from the posterior longitudinal bundle just reach its ventral surfaces. These three groups of cells are particularly important in that they receive fibers coming direct from the optic tract, thus producing what has already been spoken of as *the short reflex arc.* This offers an explanation for the direct and the consensual reaction of the pupil and the accommodative act, also by this connection all the other motor-ocular nerves are influenced. The fibers derived from the nuclei in the anterior portion of the nuclear area go to the same side, those derived from the lower portion are nearly all crossed. All the fibers which cross to the opposite side converge toward the median line, dip down below the raphe, and rising up again on the opposite side, diverge fan-shaped, passing between the fibers of the posterior longitudinal bundle. The uncrossed fibers dip down with a slight concave curve on the same side, pass between the fibers of the posterior longitudinal bundle, and remain on the same side.

As a result of physiologic experiments and experimentally produced pathologic conditions, subsequently microscopically studied, regions have been mapped out, the fibers derived from which supply the nerves to definite muscles. The small-celled nuclei anteriorly placed supply the sphincter of the pupil, and the fibers go to the same side. The large-celled single spindle-shaped nucleus supplies the muscle of accommodation of both eyes, sending fibers to both sides. At the distal end is the center for the rectus inferior, the fibers passing to the opposite side.

Following in order lie the center for the obliquus inferior sending fibers to the opposite side, and from the ventral portion fibers go to the same side. The center for the rectus internus gives off fibers to the same side and from its dorsolateral portion fibers go to the opposite side. From the center of the rectus superior fibers go to the same side, and from the center of the levator fibers go to the same side.

The Trochlear or Fourth Nerve.—This lies in almost direct connection with the oculomotor. The fibers emerge from the lateral side of the nucleus, make a slight curve outward and downward close to the fibers of the posterior longitudinal bundle, and then on a level with the descending root of the trigeminus they pass upward again to a point on a level with the widening aqueduct of Sylvius. Here the fibers form several bundles and turn abruptly backward in the roof of the fourth ventricle, where they cross over to the opposite side and appear at a point close to the posterior part of the posterior corpora quadrigemina and embrace the lateral side of the peduncle as a compact nerve root.

The Abducens or Sixth Nerve.—This nerve takes its nuclear origin about the center of the floor of the fourth ventricle. The nuclei lie close to the median line and are separated from each other by the fibers of the posterior longitudinal bundle. Its nucleus lies in a hollow space, the result of the curve made by the fibers from the facial, which almost encircle it. The ganglion cells are multipolar and of the motor type. The fibers arising from this nucleus take a dorsal and median direction toward the floor of the fourth ventricle, joining together to form a more compact band to the median side of their nuclear origin. Making a distinct curve, they turn backward toward the ventral surface of the brain to make their exit in the pons to either side of the median raphe. The fibers of this nerve remain on the same side. From the ventral and lateral surface of the nucleus a few fibers extend to the small olivary body. These fibers are especially important in that they help to close the circuit between the acoustic and the sixth nerve.

The Facial.—The nuclear origin lies somewhat posteriorly and laterally from the abducens. All the fibers derived from this center extend upward and inward toward the median line, and then curve around toward the floor of the fourth ventricle, and in so doing cover the dorsal and lateral portions of the sixth nerve. The fibers then bend downward toward their origin to finally make their exit on the same side in the pons. Owing to the peculiar course which these fibers take, they are not only brought in close connection with their own nuclei, but with the abducens, which they almost encircle, with the posterior longitudinal fibers, and with the sensory root of the fifth nerve.

The facial sends branches to the orbicularis palpebrarum and the frontalis muscle. So far as known, the only manner in which these muscles are brought into simultaneous action with other eye muscles is through the medium of the posterior longitudinal bundle.

The Trigeminus.—The fifth nerve supplies the sensory nerve fibers to the eye. The fibers are derived from the first and second large branches derived from the Gasserian ganglion. The sensory nuclear origin consists of a large ascending sensory spinal root, which extends down almost to the first cervical nerve—Bernheim calls this a descending root—and a smaller descending root. The motor nuclear origin lies close to the motor nuclear origin of the fourth nerve.

The spinal sensory portion as it ascends is in relation with the nerve vestibuli, the ascending portion of the facial and the posterior longitudinal bundle.

The Acoustic.—The accessory nucleus or central ganglion of the cochlear branch of this nerve is brought in relation with the sixth nerve by means of the fibers which run toward the median raphe to reach the trapezoid body. The trapezoid body contains ganglion cells which send fibers to the small or upper olivary body —nucleus olivarius superior—which latter has fibers connecting it with the sixth nerve. Thus the acoustic nerve can be brought in direct relation with the sixth nerve, and then through the posterior longitudinal bundle with the other motor ocular nerves. This gives the anatomic explanation for the physiologic reflex phenomena of turning our eyes in the direction of a sound.

The Posterior Longitudinal Bundle.—This, derived from the anterior fundamental strand in the cord, gradually comes to occupy a dorsal position close to the median raphe, under the fourth ventricle and upward under the fissure of Sylvius. Its line of demarcation is never very sharply defined, since it gives off fibers to neighboring strands of fibers. It has been followed as far as the nuclear origin of the third nerve. It is the connecting band by means of which the various motor ocular nerves are brought in communication with each other and by means of which the various synchronous movements of the eye-balls are brought about. It contains both centripetal and centrifugal fibers. As we have seen, some of the optic-nerve fibers go directly to the nuclear origin of the fibers which produce the pupillary reflexes.

The Short Reflex Arc.—Through means of this, all the nuclear centers of the third and fourth nerves are brought in direct connection with the optic nerve. These are further connected with each other and other cranial sensory and motor nerves by means of the posterior longitudinal bundle.

The conditions of the sixth nerve are particularly interesting, especially its connection with the rectus internus, in the production of synchronous movements of the two eyes to the right or left. A portion of the fibers derived from the nuclear origin of the rectus internus go to the opposite side, and by means of the longitudinal bundle, the abducens on one side of the raphe is connected with the rectus internus of the same side, part of the fibers of which go to the opposite side. At the same time, from the nuclear origin of the rectus internus the dendrons transmit the impulse by contact to the opposite nucleus, thus giving the full impulse to produce the movement inward of the one eye, while the abducens turns the other eye outward.

Cortical Areas of Sight.—We have seen that fully 70 per cent. of the optic-nerve fibers, both crossed and uncrossed and containing all the macular fibers, end in the lateral geniculate body. The fibers derived from the ganglion cells in this body at the same time taking up the fibers derived from the thalamus and the anterior corpora quadrigemina make their exit to the lateral side of the lateral geniculate body and pass around the posterior end of the corpus striatum and the lamina semicircularis, descend along the posterior horn of the lateral ventricle as a massive tract, known as the fibers of Gratiolet, to reach the occipital lobes. The fibers derived from the external geniculate body pass to the cortical areas of the occipital lobes in the region of the calcarine fissure, lobus cuneus, lingualis, gyrus descendens and the occipitotemporal lobes. This is the exclusive area of conscious vision. The fibers derived from the centers located in the corpora quadrigemina anterior and the optic thalamus are distributed to the second and third occipital lobes, areas not only for visual perception, but the fibers here come in contact with cortical cells which send their dendrons into neighboring areas, especially those areas which control movements and conditions that stand in relation to sight. This is true especially of the synchronous movements of the eyeballs. Thus, disease located toward the median portion of the brain, in the occipital lobe, would lead to loss of vision, in one-half of the field—hemianopsia—whereas disease more laterally located in the occipital lobe, attacking association fibers, besides producing hemianopsia, would present to us clinically soul-blindness, alexia, optic aphasia.

The association fibers connect the visual centers with the motor centers and go particularly to the gyrus angularis, irritation of which produces movements of the eyes in the opposite direction. That is, irritation of the right angular gyrus causes the eyes to turn to left, up or down. From the motor areas the fibers pass down through the peduncles under the fissure of Sylvius to the nuclei of the motor ocular nerves of the opposite side—a point of great value in the diagnosis of ocular paralyses and their relation to cortical disease.

ADDRESS BEFORE THE NEW YORK STATE ASSEMBLY COMMITTEE ON PUBLIC HEALTH.

IN THE DISCUSSION OF THE BELL BILL ("CHRISTIAN SCIENCE BILL") PROHIBITING THE PRACTICE OF MEDICINE BY UNLICENSED PRACTITIONERS.*

ROBERT T. MORRIS, M.D.
NEW YORK CITY.

We have listened to a great deal of oratory to-day in favor of various peculiar methods for treating disease. Now let us get down to plain common sense for a little while, if we can.

I would first ask the honorable members of the Assembly, before giving consideration to the points I am to make, to read in the *New York Sun of January 27*, the article by Dr. Wm. Osler[1] on "Progress in Medicine During the Nineteenth Century." I would ask them to read in the same periodical of February 3, the article by Dr. W. W. Keen[2] on "Progress in Surgery." From such basis of information it will be easy to place a proper estimate upon the value of fanciful theories of practice which you are asked to license.

When a group of believers in some theory cry "persecution" and claim to have something new, they are certain to engage the human nature of that large part of the public which does not know of the hundreds of new books and carefully conducted experiments, which annually mark the real progress of the substantial regular medical profession.

Nothing that claims to be new is neglected by responsible physicians, engineers or manufacturers.

OSTEOPATHY.

First let us consider the osteopaths: They have described, this afternoon, methods of treatment which are recognized as of value by regular physicians, but have described them in a crude way and have used, for its effect, the captivating statement that they seek the cause for disease and then remove the disease. How this appeals to all of us! It is like the prop that any new religious cult chooses for bolstering up its tenets—the prop of fraternal love and of duty to others. It promptly engages popular attention.

So they tell us that they seek for the cause of disease and then remove it. It is like the story of the boy who caught a six-pound bass up by the big rock! If you don't believe it we will go up and show you the rock! . . .

The osteopaths must of necessity benefit many cases that are adapted to their methods of treatment and our objection to licensing them is that they are wishing to assume too great responsibilities on a small margin of medical education. They are trying to find an easy way into a profession which requires long and arduous study before its members are fitted to care for our fathers and mothers, brothers and sisters—a profession that requires students to pass the regents' examination before even beginning the study of medicine.

All that we ask of the osteopaths is that they pass the examination in the rudiments of medical knowledge which our state requires of physicians, and after that they may practice what they wish. The state, for the protection of its citizens, simply asks them to show that they are familiar with the first principles of medical knowledge. Their practice is in principle the practice of the movement cure and of massage, which are recognized as important when properly applied. Their claim for having something new is entirely discredited by students of the well-established movement cures. It is not the sins of commission that are so harmful as the sins of omission made by men who are crudely prepared for practice.

One of the osteopaths has told us this afternoon that they have treated more than half of our senators and representatives at Washington. I suspected as much. Charlatans first try their treatment on public men in order to use their names. Patent medicine men first try their drugs on clergymen who are trained to accept things on faith. Responsible physicians first try their theories on the dog. [Laughter.] Why this murmur of laughter? It is not a flippant statement; I am speaking the plainest sort of truth. The reputable physician does not tell the public of the public men he is treating. He does not tell of his cures "after others have failed," but he earnestly works for the benefit of the public. That is his ideal of life work. Do not think that physicians are trying to protect themselves in urging the passage of this bill. It is for you that we are at work. What difference would it make in my income if every bootblack were to practice medicine—not one dollar's worth.

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* Delivered at the State Capital, Albany, N. Y., Feb. 6, 1901.

[1] Journal A. M. A., February 2, p. 327.

[2] Ibid., February 9, p. 383.

The osteopaths tell us that they have received recognition in several states. That is because responsible physicians have felt that it was beneath their dignity to enter into a contest with them, but the time has arrived when we must attend to the matter.

Two men have been brought here this afternoon, from a distance, to testify that they have been cured by osteopaths. How far would a responsible physician have to go to find two patients of his who had been cured? Every hour in the day he is engaged in relieving suffering, curing disease, and so successfully that he would not stoop to the necessity of asking his patients to come here to testify to the results of his work.

Physicians do make mistakes—but the better the education of the physician, the fewer mistakes he makes; therefore, do not admit into our ranks men who are unwilling to qualify themselves against making mistakes.

An advocate of the osteopaths, Mr. Burroughs, says that "any *law* which decides against the rights of a man to heal suffering interferes with the rights of American citizenship." That is another "catch phrase." Will the osteopaths relieve suffering any less if we require of them an education which the state requires of its physicians?

"CHRISTIAN SCIENCE."

First let me say that I do not accept the nomenclature of "Christian Science" as descriptive, because science is classified knowledge, and they do not classify their knowledge properly for presentation to the people of normal minds. The "Christian" part of the nomenclature I must leave for others to discuss.

I have in the hospital at present a patient who had cancer of a certain organ. The "Christian Scientists" began treatment of this patient at a time when the disease was easily curable by surgical operation, and they continued treatment until the disease had progressed to a point where a desperate operation was required in order to save her life. This is one specific instance of injury caused a trusting patient who did not deserve to suffer. . . .

The "Christian Scientists" tell us that no coercion is used in bringing patients to accept their treatment. How about the case of a dutiful child? As to the matter of coercion, let us consider it. A woman of high social standing, of delightful personality and lovely character, goes into homes where a pleasant face is welcomed and a kindly word is a solace. She uses no coercion, but, let me assure you that her *persuasion* is more effective than four coercive policemen with clubs!

Let me quote another specific case of maltreatment. A little girl suffering with favus or "milk-crust," living not far away from me, has been under treatment by "Christian Scientists" and has received no other treatment. Her hair is nearly gone and she has been the means of spreading infection. When she develops into a beautiful young woman, and is ready to take her graces into society, she will have about eight hairs pointing in different directions, and I fear will curse the people who with kind words and soft voices have brought her to this predicament.

These cases quoted are of specific injury to the individual. Let me cite another of menace to the public. In a boarding-house containing twenty people, one of the number, a school teacher, developed measles. She called a "Christian Scientist," who told her that she merely "had a *belief* in a fever," but that she was not really ill. She associated with the other nineteen people at the table. A chambermaid made the diagnosis of measles and informed the other people in the house, but the "Christian Scientist" insisted that the patient did not have measles and that she should go about among the people at the house and among her pupils as she pleased.

This instance brings up a point that I wish to make. The attorney of the "Christian Scientists," Judge Tolman, has told us that this bill is an encroachment upon religious liberty, and he asks if the legislators of this state are willing to assume the responsibility of passing upon the religious belief of a large number of the citizens. Now, it is a matter well established in law that when the acts belonging to a religious belief are injurious to the community, they must be repressed. Last year the angel dancers of New Jersey claimed religious liberty, but their acts came under the practical consideration of New Jersey justices and a part of their religious liberty ceased. Judge Tolman brings up the matter of personal rights. In this case of measles in a house with twenty other people, the patient claimed the personal right to employ whom she pleased for a physician. What, I ask, were the personal rights of the other nineteen people in the house? They had the right of protection from a state which licenses its practitioners.

A "Christian Scientist" afflicted with a dangerous but curable disease has not even the right to treat himself, because attempted suicide under our New York statutes is a crime. Either Judge Tolman does not know the law relating to religious liberty, which is improbable, or else he has tried to mislead your honorable committee by the adroit use of words.

Mr. Norton has told us that this legislation against "Christian Science" would be legislation against Almighty God. Wait a moment. Infectious diseases are caused by bacteria. Bacteria are God's creatures—He wishes them to grow. If "Christian Science" treatment kills these creatures of God, the treatment which Mr. Norton would apply is apparently directly opposed to the will of God, although for my own part I am too humble to assume that I know His wishes.

Let me quote a specific instance showing the type of mind that is commonly found among the "Christian Scientists." Curiously enough I see the patient before me in the audience. Last year he came to my office with a tumor of the scalp, saying that he did not wish to have me treat it, but merely wished to show it to me, as it was growing smaller under his treatment by faith. I made a diagnosis of a sebaceous cyst and he paid my office fee for an opinion without a murmur. He returned again some months later to say that it was growing still smaller. It finally became so *"small"* that he had to have it removed! By the irony of fate it was in a position to be in plain view of all his brethren. This is simply an instance of self-delusion which is common among "Christian Scientists."

When the members of this audience who have been "cured of defective vision" by "Christian Science," and who have thrown away their glasses were asked to rise, about seventy-five arose. Now, all of these people still have the same errors of refraction that they had at the time when the glasses were thrown away, and I will ask you to remember this as a basis upon which to place an estimate of the character of many of the other cures. It is simply a matter of self-deception. These people will not admit that they still need their glasses, but members of their families or friends will tell us the truth about it, although some people with glasses improperly fitted are of course benefited by throwing them away.

I found a pathetic instance yesterday. One of the loveliest women whom I know had persuaded a poor woman who was short-sighted that she did not need her glasses any more. Her daughter tells me that she stumbles over chairs, falls in going up-stairs, can not thread her needle, and yesterday she stepped on the cat!

One of my old college friends who is now engaged in manufacturing proprietary medicines—and good ones—tells me that the testimonials of wonderful cures from the use of proprietary medicines that are published in the newspaper advertisements are not written in the office, as most of us suppose. He says he can put up brick dust if he wishes, advertise it sufficiently and receive by every morning's mail a pile of letters a foot high testifying to the wonderful cures that it has produced. This credulity is one of the traits of the human mind and is marked in an abnormal degree, to the extent of proselyting credulity, among the "Christian Scientists." It is simply a psychologic phenomenon. Psychology is physiology and abnormal psychologic manifestations simply represent a physiologic defect. It is like the matter of free will, which is no more free in man that it is in other animals, and which is determined by the organization of the individual and by the environment of the moment. . . .

I have not one thought of enmity toward the "Christian Scientists," not one unkind feeling. They simply need our care and the public needs to be protected against them when their acts become more harmful than beneficial.

We all know the powerful effect of the mind over symptoms of disease and even over disease. The successful physician makes use of it in his every-day round. I would frequently refer patients to "Christian Scientists" for the relief of sympf I knew any among these people who were responsible, e proportion of good which they do as compared to the resulting from neglect of cases for which they assume ibility would not appeal to your honorable legislators ifying their protection under our medical practice laws. nally, by religion I am a materialist, a monist, yet I he Christ of Ernest Renan and of Robert Speer that , my very flesh creep to use His name in the presence dience of blasphemous followers who charge money for etent services. Let me quote from the tenth chapter Luke, where Christ says to His followers: "And into oever city ye enter and they receive you, eat such things re set before you and heal the sick that are therein. . Carry neither purse nor scrip nor shoes." Most of the istian Scientists" whom I know at least carry their shoes! vill not charge "Christian Scientists" with being inten- ly blasphemous. There are few more attractive charac- nd no lovlier dispositions than those of some of the "Christian Scientists" whose minds are disabled by physiologic defect secondary to a certain physical degeneration or injury.

The high character of "Christian Scientists" is often quoted in justification of their acts, but it is no higher than the character of the judges who sentenced witches to be hanged and who represented the best classes in society. We do not justify the acts of these judges.

. . . Almost every year the newspapers contain accounts of some new healer who believes in himself and who is believed in by multitudes. The accounts of his miracles do not gain much momentum to-day, however, because they are readily explained by physicians who understand hysteria and trance death. There are text-books on the subject easily accessible for all of you. There are protean nervous derangements belonging to hysteria which are very amenable to the influence of the mind. There are many symptoms and some functional diseases not belonging to hysteria which are also under the control of the mind. Even such a disease as rheumatism, due to functional disturbance of the liver, might in some cases be controlled by mental stimulus sufficient to stimulate certain sympathetic nerves. No one denies the fact of many cures under mind treatment. We simply deny their supernatural nature and state that they are subject to *rational explanation*. We further must insist upon proper estimation of their proportionate value in the whole field of disease. It is this loss of the idea of proportion that sometimes leads very intelligent people astray when taking testimony. . . .

In view of the specific instances I have given of public danger and of personal injury resulting from the acts of these good "Christian Scientists," who for the most part are perfectly honest in their beliefs, I would ask your honorable committee to consider with great deliberation the advisability of allowing them the right to assume such responsibility as is required of physicians.

58 W. 56th St.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.*

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CHICAGO.

(Continued from page 507.)

Duval and Tesson,[4] 1900: *Three dogs; bilateral uretero-intestinal anastomosis; two dogs died of pyelonephritis.* These experimenters operated on three dogs, in each case implanting both ureters *in the* rectum. They combined the operative technique of Kryński and Fowler. The ureters were secured obliquely on a mucosal flap; over this flap were sutured the serosal and muscular layers.

One dog died twenty hours after the operation, from defective technique. Both ureters were found obliterated. One dog lived two and one-half months. Post-mortem showed the uretero-rectal *anastomosis* good; ureters patent. Bilateral pyelonephritis existed without distention. The third dog lived seven months. An autopsy showed the uretero-rectal orifices patent with slightly dilated ureters. Both kidneys were markedly distended and were the seat of grave pyelonephritic lesions. The mucous valves were atrophied so as to be unserviceable. The conclusions were that uretero-intestinal anastomosis could only be successful when the trigonum, together with the ureteral orifices, was transplanted.

Perhaps the most striking fact revealed by a study of these experiments is the exceptionally high mortality accompanying the operations, whether one or both ureters were implanted in the bowel. While it is impossible to accurately state the exact number of dogs operated on, because of the indefiniteness of the reporters in recording their work, I have endeavored, for the sake of comparison, to collect such data as are unequivocal.

Out of sixty dogs in which one ureter was implanted into the intestine there were twenty-three recoveries, or 61 per cent. mortality, while out of sixty-eight dogs undergoing bilteral ureteral anastomosis only ten survived, or a mortality of 85 per cent.

The mortality of the bilateral implantations is actually more than 85 per cent., since Martin does not state in what proportion of his thirty-four experiments were both ureters implanted, hence the entire number must be excluded, although his recoveries, numbering three, are included.

Again, among the ten dogs recovering from a bilateral uretero-intestinal anastomosis are three in which the ureters were implanted, not simultaneously, but at different stages. Since the danger attending implantation in two stages is obviously less than where both ureters are implanted, these three cases (Boari, one; Giordano, two) should, strictly speaking, be excluded.

The causes of death are various, but most prominent is peritonitis through a giving way of the uretero-rectal stitches and the subsequent escape of urine into the peritoneal cavity, or an overwhelming infection of the kidney ascribed to nephritis or uremia.

The different operative procedures employed may be conveniently divided into eight groups:

1. The severed ureter is inserted into the intestine through a small incision in the bowel wall and secured to the latter by sutures, which are passed through the intestinal serosa, and then either through the peritoneum removed with the ureter or its fibrous coats. (Glück and Zeller, Tuffier, Reed and Martin.)
2. A small incision is made through all the coats of the bowel and the ureteral and rectal mucosa sutured. The incision is then carefully closed about the ureter by Lembert's sutures. (Morestin.)
3. A V-shaped flap is formed in the anterior intestinal wall, to which the ureters are sutured. This flap is buried by suturing over it the lateral folds of the bowel wall. (Vignoni.)
4. A rectangular flap containing the ureteral orifices is inserted into the bowel through an incision in its anterior wall. This flap is sutured to the freshened mucosa on the posterior wall of the bowel. (Pisani.)
5. A ligature with a needle at each end is passed through the end of the severed ureter. The nedles are passed through a small slit made in the bowel wall and brought outside the intestine from one-half to one inch below. The two ends are made taut and the ureter is drawn into the bowel. The ureter is then secured in position by sutures. (Bardenhauer, Reed and Van Hook.)
6. The ureters are buried under the serosa and muscles of the intestinal wall and secured in place by sutures uniting the ureteral and intestinal mucosa, or drawn into the bowel as described under method 5. The muscular and serosal flap is then sutured over the ureters. (Kryński and Martin.)

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* Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

7. The ureters are secured to a mucosal flap valve and buried obliquely under the serosa and muscularis. (Duval and Tesson.)

8. The anastomosis of the ureter and intestine is made with a mechanical device, which, after union is secured, passes into the intestine. (Boari.)

As has been shown, the primary mortality was exceedingly high with all these methods. The method which calls for the least amount of suturing of the ureter itself will be found to give the best results. (Reed and Van Hook.)

A number of methods were devised with a view of preventing an ascending infection, but these efforts did not meet with success. I have been unable to find a single case in which the kidneys were shown to be normal beyond dispute. One can hardly accept such loose statements as those made by Kryński, who, in speaking of the results of his new operation, says he has never seen disease of the kidneys or ureters follow its use, yet fails to give his experiments in detail. Again, Boari, in describing the specimens removed from an uretero-rectal anastomosis, states that macroscopically the kidneys presented no grave lesions.

The post-mortems on the animals surviving the operation for any length of time in nearly all instances showed unmistakable evidences of stenosis of the ureteral orifice, hydroureter, hydronephrosis, and pyelonephritis. In only a few instances were bacteriologic or miscroscopic examinations made, and without such examinations proof of the integrity of the organs can hardly be conclusive.

The most carefully conducted examinations were made in Martin's cases, and they showed in every instance inflammatory changes. As already pointed out, Novaro's case failed to demonstrate that the kidneys and ureters of the animal living four months were normal. In Reed's and Boari's cases the specimens were not examined microscopically, and the same may be said of Kalabin's cases. Briefly stated, the collective experimental results of uretero-intestinal anastomosis without the preservation of the vesico-ureteral orifices have shown that the operation is a failure, either primarily from defective technique, or from overwhelming renal infection. The surviving animals showed grave kidney lesions, the result of preceding pyelonephritis. Frank's experimental work with the vesico-rectal anastomosis will be discussed in connection with the report of a case operated upon by his method.

In order that the value of the conclusions to be drawn from recorded cases of uretero-intestinal anastomosis in man may be correctly estimated, short abstracts of the cases will be given as nearly as possible in chronologic order.

It is obviously impossible to be exact chronologically, since in quite a few instances the date of the operation has not been included in the report. Under the circumstances I have arranged the cases according to the date of publication of the article containing the report.

SIMON,[42] 1851. *Bilateral uretero-rectal anastomosis; death one year after operation; inflammatory changes in ureters and kidneys.* The first attempt to deviate the course of the urinary flow into the rectum was made by John Simon in 1851. He reasoned that in reptiles and birds the genito-urinary and digestive tracts ended in a common cloaca, and that there was no good reason why this anatomical arrangement should not be artificially produced in man. He also called attention to the sphincteric control over the urine possessed by those individuals who, after being operated on for vesical stone by way of the rectum, were left with vesico-rectal fistulæ. These views he proceeded to put to a practical test in the case of a 13-year-old boy who came under his care suffering from exstrophy of the bladder. The operation was performed July 5, 1851. By a specially devised instrument Simon succeeded in passing threads from the ureters into the rectum, so that, when tightened, pressure necrosis took place and uretero-rectal fistulæ were formed. By the tenth day some urine passed per anum. Three weeks after the operation most of the urine flowed directly into the rectum. At the end of three months an unsuccessful attempt was made to close the natural ureteral orifices. Seven months after the operation the openings into the rectum were still patent, although considerable contracted. The patient died of exhaustion twelve months subsequent to the operation. At the autopsy the ureters were found blocked with calculi the size of peas or beans. The ureters and kidneys were seriously diseased, the pathologic changes being due to the surgical method employed which had "excited suppurative inflammation along the mucous surface of the ureters."

ROUX,[40] 1853. This experimenter, evidently without any knowledge of Simon's case, proposed that the ureters be sunk in the rectum and that the exstrophied bladder be covered in by skin through plastic operations. His plan was either to separate the ureters from the vesical tumor and suspend them in the rectum through an opening made in that organ, or to form uretero-rectal fistulæ by dividing the tissues separating the ureter and rectum. Roux was led to believe that these operations were anatomical possibilities from a study of cases where the ureters congenitally opened into the rectum and from the numerous instances on record where, after the removal of a vesical stone and the establishment of vesico-rectal fistulæ, the patients were still able to control their liquid evacuations. He refrained from putting these ideas into practice because of his uncertainty as to the relations of the peritoneum and rectum in exstrophy of the bladder.

SMITH,[43] 1878. *Bilateral uretero-colonic anastomosis, extraperitoneal method in two stages; death from uremia immediately after last operation; atrophy of one kidney; inflammatory changes in the other.* Over a quarter of a century elapsed before another attempt was made to unite the ureters and intestinal tract directly. Then Thomas Smith, in 1878, operated on a boy, aged 7, afflicted with exstrophy of the bladder, by a new technique. A bougie was passed up the left ureter and an opening made in left loin; the ureter was then located and inserted into the descending colon. It was held in position by fine carbolized catgut passed through the bowel and through cellular tissue about the ureter. For six days the urine passed with the feces with no unusual irritation of the bowel except that the movements were more watery and frequent than natural. On the ninth day feces and urine passed through the incision in loin. There was later free suppuration in or around the kidney, the abscess opening in the loin at site of wound. Fistulous opening gradually closed. One year after the operation the boy was in good health, no urine escaping from left ureteral orifice.

Second operation fourteen months after first. The right ureter was inserted by the same method into the ascending colon, fine wire sutures being used instead of catgut. The patient became drowsy, and died fifty hours after the operation

Autopsy.—Pelvis of left kidney distended with clear fluid and the organ reduced to a fibrous condition. The ureter was one and a half inches in length and the uretero-rectal opening was not patent. The right kidney was much enlarged and the capsule was adherent to the cortical substance, which was soft and pliable. The pelvis of this kidney and corresponding ureters were dilated. A small probe could be made to pass through the ureterorectal opening only with great difficulty.

KÜSTER,[36] 1891. *Both ureters in rectum, following removal of bladder; death in five days from peritonitis and renal infection.* In 1891 Küster removed the bladder and prostate from a patient aged 53, for malignant disease. The operation was performed by the perineal and abdominal route. The ureters were cut off from the bladder obliquely, the rectal and ureteral mucosa being united by one series of sutures, and then reinforced by a row of sutures externally. The patient lived five days. The autopsy showed purulent peritonitis and undoubted renal infection. The ureters were not dilated, but the sutures uniting them to the rectum had not held.

CHAPUT,[30] 1892. *Case 1. Uretero-vaginal fistula; right ureter united to rectum; recovery; well after eight years.* September 13, 1892, Chaput operated upon a woman, aged twenty-nine for a uretero-vaginal fistula, resulting from a vaginal hysterectomy. The abdomen was opened and the enlarged right ureter was united to the rectum by a series of sutures, one set uniting the mucous, the other the serous surfaces. Convalescence was uneventful.

In a personal communication to the author, dated April 3, 1900, Dr. Chaput states that the patient is still alive, although the operation was performed eight years ago. Her health is very satisfactory and there are no signs of renal infection. She has about three liquid evacuations in twenty-four hours.

Case II. Tubercular cystitis: double uretero-colonic anastomosis in two stages; death from uremia after last operation. A woman, aged forty-five years was operated upon November 25, 1892, for a chronic tubercular cystitis which had not yielded to a suprapubic cystotomy. Through an abdominal incision the left ureter, as large as the little finger, was located and sutured into the descending colon by the same method described in Case I. Cure was rapid and complete. Eight watery stools per day. Three months later, March 1, 1893, the right ureter, as large as the thumb, was united to the cecum by the same method. No fever resulted, but the patient became comatose and died the same day. The existing diarrhea was checked. Suppression of urine was the undoubted cause of death. No autopsy was performed.

Rein,[30] 1894. *Exstrophy of the bladder; bilateral uretero-rectal anastomosis; death.* Rein, at the International Congress at Rome, 1894, reported the case of a woman, aged twenty, upon whom he had operated for exstrophy of the bladder.

An incision 16 cm. in length was made across the ectopic bladder. The uterus and left adnexa were removed and a bougie introduced into the left ureter. A good-sized drainage-tube was introduced into the rectum and both tubes approximated. An incision a few millimeters in length was made at this point in the rectal wall and a glass drainage-tube, previously passed into the ureter, was carried through this incision into the rectum. An elastic drainage-tube was attached to the tube already in the ureter and carried out through the anus. The artificial uretero-rectal fistula was closed by sutures in two layers. The same operation was performed on the other side. The ectopic bladder was now extirpated and all hemorrhage controlled. A perfect union of the abdominal wall was impossible because of the considerable separation of the ossa pubis and the recti-muscles. The operation consumed two hours and fifty-two minutes. The patient died in a short time.

Duplay,[31] 1894. *Case I. Exstrophy of the bladder; both ureters in sigmoid; death from pyelonephritis.* Duplay, in an article on exstrophy of the bladder, speaks of having operated upon a girl aged eight, by implanting the ureters into the sigmoid flexure. The patient died in a few months of pyelonephritis.

Case II. Same as above; death. Mazel (page 483) refers to Duplay's article, and a written communication from Duplay, in which the latter mentions a second girl, aged ten years, operated on by him for exstrophy of the bladder. Both ureters were implanted in the sigmoid flexure with fatal results.

Trendelenburg,[44] 1895. *Extirpation of one kidney and bladder; uretero-sigmoidal anastomosis; death from extension of tuberculosis.* Trendelenburg reported a case where the right kidney was extirpated for tuberculosis. The entire bladder, except a small piece in which ended the left ureteral orifice, was also extirpated for extensive tubercular disease. This ureter was implanted in the sigmoid flexure and prevented from slipping out by the attached portion of the bladder. Functionally the operation was a success, but the patient subsequently succumbed to tuberculosis of other organs. (While the ureteral orifice and its mucosa was retained in this case from the method employed in its implantation, the probability is that the end of the ureter sloughed, and the insertion into the bowel in no way differed from those cases of implantation where the ureter was cut off external to the bladder.)

Boari,[27] 1895. *Vesico-vaginal fistula; left ureter in descending colon; well six months later.* Boari, by means of his anastomotic button, grafted the left ureter into the descending colon in a case of vesico-vaginal fistula, with complete destruction of the urethra. The patient lived, and six months later was in perfect health, passing the urine, partly by the anus and partly by the vagina, every three or four hours, without inconvenience. The operation was made extraperitoneally through a curved incision, reaching from the middle of Poupart's ligament to the anterior superior spine of the ilium. The posterior parietal peritoneum was opened and the colon secured, and after the graft was made was fastened extraperitoneally.

The Boari button is to be used preferably by the extraperitoneal route. It is best described by drawings which are given below. (Figs. 4-9.) A button suitable to the caliber of the ureter should be chosen. The ureter is invaginated upon the tube and tied with silk. Then the movable plate is lowered until it meets the under plate and is held in place by a stylet which passes through the bottom tube. A purse-string suture is passed in the bowel and an opening made just large enough to allow the rectal plates to slip in. The suture is now drawn taut and the stylet removed, and the spring carries the rectum against the ureter.

Casati,[28] 1895. *Vesical tuberculosis; left uretero-colonic anastomosis; death in thirty-five days of tuberculosis.* Boari reports a case operated upon by E. Casati where the former's anastomotic button was employed for very advanced vesical tuberculosis. The left ureter was grafted into the descending colon with the intention of later making a graft of the right ureter and removing the bladder; but the patient lived but thirty-five days after the operation.

No report is made of the passing of the button or the nature of the rectal discharges. Neither are the post-mortem findings recorded.

Chalot,[29] 1896. *Cancer of uterus; bilateral uretero-rectal-anastomosis; recovery; living one year after operation.* July 22, 1896, Chalot operated upon a woman, aged 45, for uterine carcinoma with involvement of the broad ligaments. The abdomen was opened in the median line, and the left ureter isolated and ligated. The central end was dilated and implanted into the rectum by means of the Chalot anastomotic button. The ureteral end of the button was retained in place by a circular ligature. The internal iliac artery was then ligated. In the same way the right ureter was anastomosed with the rectum and the right internal iliac artery ligated. The uterus, appendages, and broad ligaments were then removed with but little hemorrhage. Gauze drains were inserted through the vagina and at the lower angle of the abdominal incision. A large tube was left in the rectum. Convalescence was uninterrupted. The gauze was removed gradually, with no leakage of urine. All the urine passed by the anus. For the first month the patient suffered from diarrhea, having three to four stools an hour, but this condition gradually improved.

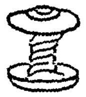
Fig. 4.

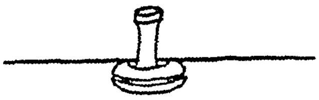
Fig. 5.

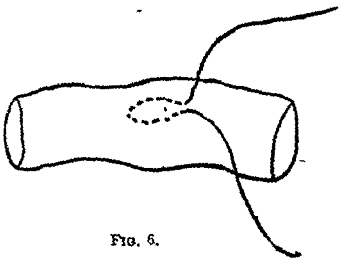
Fig. 6.

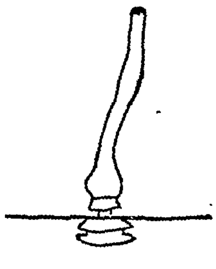
Fig. 7.

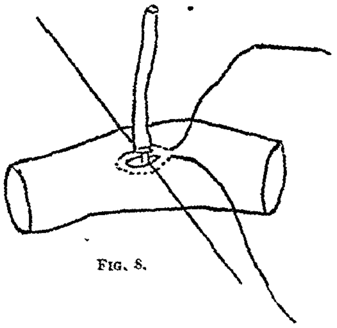
Fig. 8.

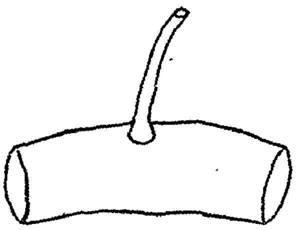
Fig. 9.

Chalot's tube for anastomosing the ureters with the intestine is made of nickel and is cone-shaped at each end. It is 3.5 cm. in length and is hollow, its inside diameter measuring from 1/3 to 3 mm., 1½ cm. from one end and 2 cm. from the other is a groove which is large enough to receive a loop of thread, which is tied around the end of the tube. The rectal end of the tube is perforated so as to permit the introduction of a thread by means of which the tube may be withdrawn, later, if desired.

Figs. 10 and 11 show the method of securing the tube to the bowel-wall.

Fowler,[33] 1896. *Exstrophy of bladder; bilateral uretero-rectal anastomosis; recovery; well three and a half years after operation.* Fowler operated upon a boy aged six September 20, 1896, for exstrophy of the bladder. The abdomen was opened in the median line. The posterior layer of the peritoneum was incised, the ureters exposed and cut away at their attachments to the bladder-wall. An incision 7 cm. long was then made in the anterior wall of the rectum through the serous and muscular coats of the bowel. The edges of the incision were retracted and a tongue-shaped flap of mucous membrane with its base directed upward was cut from the mucous membrane in the lower half of the diamond. This tongue-shaped flap was doubled upon itself in an upward direction in such a manner that one-half of its mucous surface presented anteriorly, where it was secured by two catgut sutures. A flap-valve was thus formed, both sides of which were covered with mucous membrane. The ureters were then placed in the incision so that their obliquely-cut ends lay upon the presenting mucous membrane of the flap. The ureters were secured in position by catgut and the flap-valve pushed into the cavity of the rectum, and the wall of the latter closed by catgut sutures. The original wound in the rectal wall was closed with fine silk sutures. The patient promptly recovered. The rectum was tolerant of the urine, which was passed per anum on an average every three hours. Defecation occurred about once daily, and the movement was generally formed.

In a personal communication dated March 14, 1900, three and a half years after the operation, Fowler writes: "In reply to your inquiry concerning the condition of the boy upon whom I performed the operation of implantation of the ureters, I am glad to inform you that he is and has been since the operation in good health. There are no indications of renal infection."

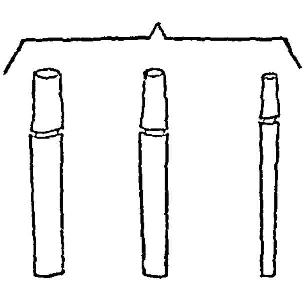

Fig. 10.

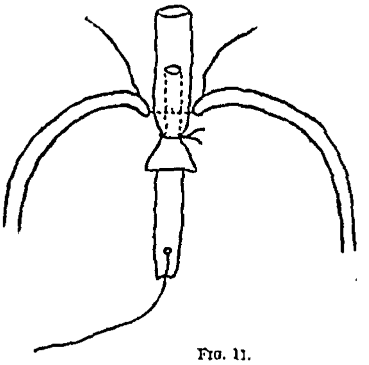

Fig. 11.

Tuffier et Dujarnier,[46] 1896. *Removal of bladder for malignant disease; bilateral uretero-rectal anastomosis; death seven months later; causes unknown.* The operation was performed upon a man, aged forty, who had suffered from frequent micturition and vesical hemorrhages from a malignant growth confined to the bladder-wall. October 20, 1896, the bladder was removed and catheters fastened in the severed ureters. Each ureter was then passed through an incision made on either side of the rectum and fastened outside the anus to forceps to prevent backward displacement. The operation was followed by symptoms of sepsis. Six days after the operation urine passed by way of the hypogastric opening. Two months after the operation the patient was able, by wearing a receptacle for his urine, to attend to his business. The patient died seven months after operation, of unknown causes.

Fritsch,[31] 1897. *Bilateral uretero-rectal anastomosis; death from pyelonephritis.* Fritsch, in the *Handbuch der Gynäkologie*, mentions, in discussing the question of uretero-rectal implantation, that he has performed the operation on one patient and that death resulted from pyelonephritis. Therefore he condemns the operation.

Tuffier,[45] 1897. *Uretero-vaginal fistula; left uretero-colonic anastomosis; recovery.* Tuffier implanted the left ureter in the descending colon, the lumbar route being employed. The woman was suffering from a uretero-vaginal fistula, the upper end of the ureter being in such a position as to make a uretero-cystotomy impossible. The woman recovered from the operation, and showed no signs of renal infection.

Von Winiwarter, 1898. *Removal of bladder; uretero-rectal anastomosis; recovery with fistula.* The operation was performed January 3, 1898. The urethra and prostate were first exposed and separated from the rectum. The pubic bones were separated and the bladder severed from its attachments and removed. The ureters were catheterized and sutured into the antero-lateral walls of the rectum. The catheters were removed in forty-eight hours and urine flowed through the anus. Five weeks after the operation the pains had disappeared and the patient had gained in flesh. Most of the urine escaped from a fistula in the anterior wall of the rectum, causing itching in anal region.

Schnitzler,[41] 1898. *Case I. Uretero-vaginal fistula; right uretero-colonic anastomosis; recovery.* The operation was performed for the relief of an uretero-vaginal fistula following a vaginal operation. The right ureter was implanted in the ascending colon. Immediate result satisfactory. Ultimate result not mentioned.

Case II. Vesico-vaginal fistula; bilateral uretero-colonic anastomosis; death in a few days; pyelitis. Operation was performed for the relief of a vesico-vaginal fistula arising from carcinomatous ulceration, the radical removal of the malignant growth being impossible. The right ureter was implanted in the ascending, the left in the descending colon. The patient died in a few days, and on the left side was found a severe pyelitis, which probably existed in some degree before the operation. There was also necrosis of some portions of the mucous membrane of the ascending colon, which came in contact with the urine.

Evans,[32] 1899. *Absence of right kidney; abscess of left kidney, which was opened in loin; left uretero-rectal anastomosis; recovery; thirteen months after operation living and well.* Through the kindness of Dr. Evans I am allowed to give an abstract of this interesting, unpublished case. The patient was a man, aged twenty-three, who had had a suprapubic cystotomy July 16, 1898, for chronic purulent cystitis of long standing. Left ureter catheterized; right could not be found. November 28, left kidney opened and large amount of pus evacuated; ureter greatly thickened. February 18, 1899, left ureter was implanted into rectum just below the brim of the pelvis by an extraperitoneal incision. Ureter allowed to project one-half inch into the rectum and united to the bowel by silk and catgut sutures. Gauze drain in each angle of wound. For four days urine did not pass freely through rectum, although water could be made to pass into the rectum by way of the loin. Nine days after operation a small amount of feces escaped through lower angle of incision. Two days later both loin and bladder fistulæ were closed and bowels moved often with watery stools after implantation of ureter. No urine passed by bladder fistula or by penis, showing absence of right kidney. Four months after operation the fistula in the loin reopened and discharged for a number of weeks. Thirteen months after the operation patient is in good health and is working every day. The fistula in the loin has discharged for past five months, and at present leaks only at night and not at all during the day, when bowels move three or four times. There never has been any rectal irritation; suprapubic wound is firmly closed.*

Turetta, 1899. *Removal of bladder; bilateral uretero-rectal anastomosis with Boari's button; death; autopsy showed suppurative nephritis.* Turetta reported before the Congress of Italian Surgeons the case of a man, aged 23, upon whom he had performed total extirpation of the bladder, with implantation of the ureters into the rectum. For several months the patient had suffered from severe hematuria. Examination revealed a hard growth confined to the bladder wall. March 1, 1899, the bladder was resected through a temporary separation of the os pubis and the ureters anastomosed with the rectum by means of Boari's buttons. The urine passed *per anum* until the third day, when the flow ceased and the urine escaped by the incision. Attempts to seize the ends of the ureters failed. Symptoms of nephritis now supervened and became more and more marked until the death of the patient on the sixteenth day after the operation. The autopsy showed suppurative nephritis; the pyramids contained small abscesses.

Peters, 1899. *Exstrophy of the bladder; bilateral extraperitoneal uretero-rectal anastomosis; recovery; good health ten months after operation.* Peters exhibited a boy, aged 4½, before the Canadian Medical Association, upon whom he had operated five weeks previously for the cure of exstrophy of the bladder. Two years before he had operated successfully for procidentia recti. In July, 1899, the ureters were implanted into the rectum extraperitoneally, one on either side of the bowel. Good control over the sphincter ani resulted, the patient having evacuations every three hours during the day and every four or five hours during the night.

In a personal communication dated March 30, 1900, Dr. Peters states that the patient is in perfect health ten months after the operation. Able to retain urine three, four, and five hours during the day and eight hours at night. No eczema about the anus. The ureteral openings appear as two prominent papillæ in the antero-lateral aspect of the rectum, about one-half inch above the internal sphincters. Urine quite normal in quantity and percentage of urea.

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* Feb. 1, 1901. Patient died about two months ago. Autopsy showed atrophy of right kidney, pyelonephritis of left.

WALSHAM, 1899. *Left uretero-colonic anastomosis; ureteral orifice became stenosed, with subsequent destruction of kidney.* Walsham mentions a case seen by him where the end of the left ureter was implanted in the descending colon. The artificial opening became obliterated by cicatricial contraction, with subsequent destruction of the corresponding kidney.

KRAUSE, 1899. *Removal of the bladder for malignant disease; implantation of both ureters into the sigmoid; recovery; well three and one-half months after operation.* The operation was performed upon a patient, aged 17, three and one-half months before the report. For a year he had suffered from a tumor involving the base of the bladder and completely obstructing the left ureter. The bladder was removed by the extraperitoneal route. The peritoneum was opened four times, but immediately closed with catgut sutures. The vesicules seminales were left in place. The ureters were not sutured into the rectum because of the extremely low position of the peritoneal cul-de-sac and the correspondingly extreme traction which would have resulted. They were sutured into a coil of the sigmoid flexure, which was drawn down through an incision in the posterior cul-de-sac. Two tiers of sutures were employed; the result was excellent, the convalescence being afebrile and a gain of ten pounds in weight resulting. He can control his urine for two hours and can rest from five to six hours at night.

In 1897 Krause performed a similar operation on a man with carcinoma and existing pyelitis. Patient lived but a short time and died of pyelonephritis.

BECK, 1899. *Tuberculosis of bladder; bilateral implantation of ureters into sigmoid; recovery; well seven months after the operation.* Beck showed a man before the Chicago Medical Society whose ureters he had implanted in the sigmoid flexure for tubercular disease of the bladder. After the formation of a peritoneal and muscular flap in the gut wall a small opening was made in the mucosa, through which the ureters were drawn one and one-half inches into the bowel; the ureters were then sutured in a groove of the bowel wall. The patient made a good recovery, and presents no evidence of pyelonephritis eight months after the operation. Beck believes that this freedom (?) from infection is due to the fact that the ureter, being left free in the bowel, offers a barrier to ascending infection of the ureter and kidney by doing away with necrosis and the formation of granulation about the mouth of the ureter.*

W. C. WOOD, 1899. *Exstrophy of the bladder; bilateral uretero-rectal implantation; death in two months from pyelonephritis.* Wood showed before the Brooklyn Pathological Society the kidneys of a patient, aged five, upon whom two months previously he had operated for exstrophy of the bladder. The ureters were implanted into the rectum according to the technique advocated by Fowler, with the exception that the implantation was performed higher up in the bowel. The patient died in two months of pyelonephritis.

MARTIN, 1900. *Four cases of uretero-rectal anastomosis with three deaths; operations performed for exstrophy of bladder, tuberculosis of bladder and carcinoma of bladder. Case I.* Exstrophy of the bladder in a boy, aged 14. The right ureter was implanted into the rectum extraperitoneally. A second operation upon the left ureter was a failure. The urine was passed *per rectum* every six hours, independent of fecal matter. At first there were casts in the urine passed *per rectum.* Eighteen months later the boy was perfectly well.

Case II. Tuberculosis of the bladder in a man, aged 30. The bladder was removed and the right ureter implanted in the rectum; the left ureter in the skin. A ureteral catheter was employed. The patient died of shock and suppression of urine twenty-six hours after operation.

Case III. A woman, aged 37, was operated on for carcinoma of the uterus and bladder. The ureters were implanted in the rectum by the Martin method. Urine flowed through the ureteral catheters and the anastomosis was found perfect. Died in four days of peritonitis.

Case IV. The carcinomatous bladder and uterus were removed from a woman, aged fifty-four years, and the ureters implanted in the rectum. The patient died four hours later of shock.

RESUME OF 33 URETERO-INTESTINAL IMPLANTATIONS.

Number of patients operated upon			29
Number of operations			33
Number of operators			22
Conditions for which operations were performed stated in			31
Chronic cystitis			3
Ureter in rectum		1	
Ureter in descending colon		1	
Ureter in ascending colon		1	
Recoveries	2		
Deaths	1		
Cancer of bladder			6
2 ureters in rectum		5	
2 ureters in sigmoid		1	
Deaths	3		
Recoveries	3		
Tuberculosis of bladder			4
1 ureter in sigmoid		1	
2 ureters in sigmoid		1	
1 ureter in descending colon		1	
1 ureter in rectum		1	
Recoveries	3		
Deaths	1		
Exstrophy of the bladder			11
1 ureter in ascending and descending colon		2	
2 ureters in sigmoid		2	
2 ureters in rectum		5	
1 ureter in rectum		2	
Recoveries	6		
Deaths	5		
Uretero-vaginal fistula			3
1 ureter in descending colon		1	
1 ureter in rectum		1	
1 ureter in ascending colon		1	
Recoveries	3		
Vesico-vaginal fistula			2
1 ureter in descending colon		1	
1 ureter in ascending and descending colon		1	
Recoveries	1		
Deaths	1		
Cancer of uterus			2
2 ureters in rectum	2		
Recovery	1		
Death	1		
Sex stated in			27
Males		15	
Females		12	
Age mentioned in			21
Oldest			53
Youngest			4½
Site of implantation noted in			33
Both ureters in rectum			13
Both ureters in sigmoid			4
Ureter in descending colon			6
Ureter in ascending colon			3
Right ureter in rectum			3
Left ureter in rectum			2
Left ureter in sigmoid			1
Both ureters implanted in			18
Primary recoveries, bilateral implantation			10=56 per ct.
Deaths, bilateral implantation			8=44 per ct.
Ultimate result not stated, bilateral implantation			1
Subsequent death from pyelonephritis			3
Subsequent death, cause unknown			1
One ureter implanted in			15
Primary recoveries, unilateral implantations			12=80 per ct.
Death, unilateral implantations			3=20 per ct.
Anastomatic buttons used in			4
Both ureters implanted in two cases, death			1
One ureter implanted in two cases, recoveries			2
Immediate recoveries, total			22=67 per ct.
Deaths, immediate, total			11=33 per ct.
Renal infection noted in			11
Functional result stated in			14
Good functional result			9
Poor functional result			5
Of the 22 recoveries primarily from the operation, ultimate results not mentioned in			1
Failure			1
Died later of tuberculosis of other organs			2
Died seven months later, cause unknown			1
Died later, pyelonephritis			3
Died of uremia subsequent to implantation of other ureter			2
Kidney destroyed by stenosis of uretero-rectal orifice			1

OF THE REMAINING 11 CASES.

1 ureter implanted, well after	6 months.
1 ureter implanted, well after	13 months.
1 ureter implanted, well after	18 months.
1 ureter implanted, well after	2 years.
1 ureter implanted, well after	8 years.
2 ureters implanted, well after	5 weeks.
2 ureters implanted, well after	3½ months.
2 ureters implanted, well after	7 months.
2 ureters implanted, well after	10 months.
2 ureters implanted, well after	1 year.
2 ureters implanted, well after	3½ years.

A critical survey of these thirty-three operations shows the primary mortality, 33 per cent., to be exceedingly high. If to this be added the uncertainty as regards subsequent renal infection in the cases surviving the operation, it must be admitted that uretero-intestinal anastomosis is not an operation of choice.

(To be continued.)

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* Feb. 23, 1901. Patient died some weeks ago. Autopsy showed marked bilateral pyelonephritis.

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DIABETES MELLITUS.

It seems probable that diabetes has long been recognized, although the presence of sugar in the urine, from its sweetish taste, was first detected in the seventeenth century, and it was not until the eighteenth that glucose was isolated. Then followed a careful description of the disease, with the recommendation of an animal diet and exclusion of vegetable food in treatment. Scientific study of the etiology, nature and treatment of diabetes, was, however, not begun before the middle of the nineteenth century, but since then few diseases have had more attention devoted to them, both clinically and experimentally. In an interesting communication, von Noorden[1] discusses some as yet unsettled questions in this connection, and points out the lines along which scientific investigation may profitably be directed. Quite apart from increased thoroughness of clinical study, there is scarcely room for doubt of the increased morbidity and mortality of diabetes.

With regard to the question of etiology, emphasis has been placed upon the influence of alcoholic excess, heredity and race. The especial predisposition of the Jews to diabetes has attracted attention, and it is suggested that their dissemination and admixture with Indo-Germanic blood may have something to do with the more widespread prevalence of the disease.

A satisfactory explanation for the excretion of sugar by the diabetic patient is yet wanting. This has been thought to be due to the presence of an increased amount of sugar in the blood, but it has been shown experimentally that sugar may appear in the urine as the result of certain forms of intoxication, without an excess of sugar in the blood. The latter phenomenon has been attributed to special activity on the part of the kidneys, and the condition has been designated renal diabetes. In addition to glucose, combinations containing it may be present in the blood. In general it is agreed that the sugar of the blood and the urine is derived from carbohydrates, especially hexoses and pentoses, but it has been shown that it may be derived also from certain proteids and from fat.

Among the special metabolic processes peculiar to diabetes are the production and elimination of non-nitrogenous substances belonging to the fatty-acid series, namely, acetone, diacetic acid, and beta-oxybutyric acid. These three are closely related, not only clinically, but also pathologically. When the urine and the expired air contain little acetone, diacetic acid and beta-oxybutyric acid also are as a rule absent. When much acetone is present, diacetic acid likewise will be present; and when there is much of the latter, there will generally also be beta-oxybutyric acid. It seems probable that beta-oxybutyric acid is the parent substance, appearing in the urine only when produced in large amount, or when reduction in the alkalinity of the blood prevents its transformation into diacetic acid. The presence in the blood of the acids named is responsible for the large elimination of ammonia that is observed in cases of marked diabetes. It is not known why the diabetic produces so much beta-oxybutyric acid or diacetic acid, but this is favored by exclusion of the carbohydrates from the diet. The source of the beta-oxybutyric acid is believed to be the proteids and the higher fatty acids. The most important fact in this connection is that diabetic coma is almost always associated with the presence of large amounts of beta-oxybutyric acid or its derivatives in the blood; but whether the coma is dependent upon the acid or upon an intoxication peculiar and specific to diabetes, or to both of these influences is, as yet, a matter for discussion.

It is no longer believed that the general metabolism is increased in cases of diabetes, with resulting emaciation and increased demand for food. The oxidation processes are not greater than in a healthy individual under normal conditions, and the emaciation is due to loss through the urine, as sugar, of a part of the energy supplied by the food ingested. As a rule, further, the proteid metabolism of the diabetic is normal. Exceptionally, in the terminal stage, before the onset of diabetic coma, toxogenic proteid metabolism may occur in accordance with the character of the diet. The diabetic exhibits a tendency to suffer from loss of lime, and this is thought to be due to the presence of organic acids in the blood. Absorption of food from the stomach and the intestines, however, pursues a normal course. In some cases, on the other hand, absorption of fat and proteids is impaired. Under such circumstances it is probable that the secretion of pancreatic juice is interfered with, and, clinically, administration of pancreatic extract has proved serviceable.

There is yet much to learn in connection with the pathogenesis of diabetes. It is known that lesions of the floor of the fourth ventricle, intoxication with phlorídzin, and total destruction or extirpation of the pancreas, may, among other things, give rise to the manifestations of the disease. Clinically, diabetes may be considered a derangement of metabolism of varying degree, and with corresponding variations in the intensity of the symptoms to which this gives rise. In the line of treatment no great advance has been made beyond that of rigid dietetic individualization. There is no effective medicinal remedy, although opium and its alkaloids, as well as antipyrin, salicylic acid and jambul, are capable of diminishing the elimination of sugar, but their effect is uncertain and transitory, and the injury resulting from their long-continued use is greater than the temporary benefit.

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[1] Berliner klin. Woch., 1900, Nos. 49 and 50.

RECENT VIEWS CONCERNING THE GENESIS OF CARCINOMA.

Ribbert's opinions as to the early participation of the underlying connective tissue in the development of carcinoma have been the subject of a severe arraignment by Lohmer.[1] For a considerable period, chiefly through the work of Thiersch and Waldeyer, the origin as well as the further growth of carcinoma was held to be directly due to the proliferation of the epithelium into the deeper tissues. Ribbert and his pupils diverged from this conception in that they traced the origin of the tumor to a disconnection of the epithelial cells from their associates by processes in the subepithelial connective tissue; following such dislocations, the loosened cells proliferated to form a tumor. Such severances are, according to Ribbert, produced by the growth of the connective tissue into the epithelium, by the lengthening of the papillæ of the corium so that the interpapillary epithelial pegs become correspondingly drawn out and ultimately separated, and by the pushing outward of the epithelium *en masse* by the increased amount of tissue in the corium. There is no doubt that Ribbert's theories have been of great service in stimulating study of the dynamics of the process; nor is there any question but that they minimize, to insignificance, the important change in the epithelium whereby the cells proliferate and undergo the marked morphologic alterations that Hauser and others believe to be the visible signs of altered biologic conditions. Lohmer, in a careful study of serial sections of eight carcinomas of the lip, of carcinomas that originated in sebaceous glands and hair follicles, in the mammary gland, penis, forehead, nose, tongue, pancreas, and different parts of the gastro-intestinal tract, has failed entirely to find adequate histologic evidence to support the views of Ribbert. He was able to prove that certain cases originated solely by the proliferation of the epithelium inward, that elongation of the interpapillary epithelium in many cases was absent, that on the border of glandular carcinomas, the new glands are produced by the proliferation of pre-existing glands, and, what is still more interesting, he was able to find in some carcinomas that two or more entirely independent foci of proliferation were present. He is forced to the conclusion that we must return to the former views of Thiersch and Waldeyer, that the multiplication of the epithelial cells is alone responsible for these growths.

The reasons for the increased proliferative energy of the cells whose end product is a tumor have been theoretically assumed, by Brosch,[2] to be due to a double stimulus. He believes that the initiatory changes are reparative in nature, and that when these are unable to restore the damaged parts the added energy causes them to multiply still further and to produce such an amount of new tissue that tumors are formed. He distinguishes two forms of proliferation, that called forth in the response of the tissues to injury—essentially teleologic—and such as occurs in tumors. The proliferation of cells in consequence of physiologic waste and wear, he would designate by the name regeneration. Upon this assumption he has made careful re-examination of Lowenthal's tables[3] and finds that in many cases injury to parts in which reparative processes were already commenced has caused tumors; the second injury has been sufficient to supply the stimulus necessary to cause proliferation that far oversteps the requirements. Many cases of carcinoma that develop in the cicatrices of burns belong to this category. In some cases in which a positive history of previous trauma was lacking, the defect was filled by careful inquiry into the occupation and habits of the individual. He quite correctly calls attention to the impossibility of obtaining positive information about the traumatic injuries to the surface of the gastro-intestinal canal—situations where trivial harm is fully as important as extensive injuries upon the outer surface.

There is much that is interesting and attractive about the theoretical axiom erected by Brosch of trauma-proliferation, trauma-tumor, and one of the most valuable supports to this view is afforded by the occurrence of malignant growths following trauma of benign tumors. He attributes the repeated failure of previous investigators to produce tumors by implantation experiments to the absence of certain factors in the causal chain, and to the necessity of experimentation upon a productive process that has already been established. Upon this basis he bruised the skin of the back of a guinea-pig and, after a granulating wound had formed, rubbed it at intervals with a solution of paraffin in xylol; after some weeks a very characteristic ulcer was produced, resembling the cerebral convolutions in miniature; the elevations in the floor of the ulcer were caused by an atypical epithelial growth that in all respects resembled an early carcinoma. The experiments have not as yet been conducted to the end that regional and general metastatic growths are reported. It will be noted that these two important contributions to the subject of tumor genesis do not necessarily conflict with the parasite theories of tumors.

THE BOSTON MEDICAL LIBRARY.

After twenty-five years of untiring effort the Boston Medical Library Association, originally composed of six physicians, on January 17 dedicated its new and complete building by interesting and appropriate exercises. A series of short addresses, admirably suited to the time and place, were given by men from Boston, New York, Philadelphia and Baltimore. Any one really interested in the question of medical libraries can derive much pleasure and profit from reading the various addresses.

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[1] Ziegler's Beitraege, 1900, xxviii, 372.

[2] Virchow's Archiv, 1900, clxii, 32.

[3] Archiv f. klin. Chir., Bd. xlix.

The Boston Medical Library is the fourth in size in the country, being exceeded by that in the Surgeon-General's office in Washington, that of the College of Physicians of Philadelphia, and that of the Academy of Medicine in New York. It contains about 33,000 volumes and 30,000 pamphlets; it receives about 500 periodicals. To adequately house a growing collection of this kind and to furnish suitable and inviting facilities for its daily use require a commodious, specially constructed building; and the Boston Medical Library now has a fitting domicile in a chaste and appropriate building on one of the most attractive streets, "commanding a view of exceeding beauty." For erecting this building $73,000 were collected by subscription; the total cost is $140,000; the association has $25,000 in land, so that there is a balance of debt of $42,000. It seems that the money has been secured wholly through the medical profession of Boston. The new building is planned to be of use to the profession and the community in other ways than as a library. A directory for nurses is conducted within it; and by an admirable foresight, which it is hoped may come into play in connection with similar undertakings elsewhere, suitable halls for the meetings of various medical societies have been added. Portraits of past worthies ornament the walls, and the memory of Oliver Wendell Holmes is to be kept green by naming the principal reading room Holmes Hall; this room contains many Holmes mementoes. It is pleasant to note that the amenities of the social side of professional life have been so well cared for as to provide smoking room and supper room. Indeed, it is proposed and was urged by some of the speakers to enlarge the scope of the functions of the library so as to include those of a society or academy, making the institution similar to the Academy of Medicine in New York and the College of Physicians in Philadelphia. This subject is certainly an important one; its treatment in Boston will be watched with great interest, and it should receive a most careful consideration wherever plans for the benefit of the medical profession and for the advancement of medical knowledge are being matured.

The Boston Medical Library is especially indebted for its great progress to one man, Dr. James R. Chadwick, the librarian, whom Dr. Oliver Wendell Holmes described as the "untiring, imperturbable, tenacious, irrepressible, all-subduing agitator, who neither rested nor let others rest until the success of the library project was assured." Having pursued a cherished purpose for a quarter of a century the felicitations offered Dr. Chadwick at the dedicatory exercises will be echoed wherever interest in medicine lives.

Thanks to Dr. John S. Billings and the Index Catalogue, bibliographic research has been rendered comparatively easy and the scope of medical research greatly extended. The Index Catalogue has helped to create a demand for books and especially for periodicals. In the words of Osler, such men as Billings and Chadwick, "loving books partly for their contents, partly for the sake of the authors, they not alone keep alive the sentiment of historical continuity in the profession, but they *are the men who make possible such gatherings*" as the one in Boston the other evening. More men of this class are needed among us. When will the Billings and the Chadwick of some of the large cities west of the Alleghenies arise, in Chicago, in St. Louis, and elsewhere?

THE OPEN-AIR TREATMENT OF PULMONARY TUBERCULOSIS.

The knowledge that pure air is a potent agent in the cure, as well as in the prevention, of pulmonary tuberculosis is not a discovery of recent date, but it is only within the last quarter of the nineteenth century that the principle has been systematically applied. The fact must never be lost sight of that the tubercle bacillus is not the sole, though withal the specific, etiologic factor in the development of tuberculosis. The nebulous condition comprehended in the designation "susceptibility" constitutes only a less important factor. This may be inherited or acquired. It is best counteracted by hygienic measures and by improvement in the general nutrition; and these ends are best attained through a life in the open air and suitable dietetic regulations. It has been thought in the past that the first of these objects especially could be secured only at certain altitudes above sea-level and under certain meteorologic conditions present only in some localities; but the majority of sufferers from tuberculosis are unable for obvious reasons to leave their homes and assume the expense that change of residence necessarily entails. Fortunately for those who can not seek the desired climate, it is possible to provide them at home with many of its conditions, and the principal of which are purity of air and sunshine. These prophylactic measures are applicable also in the treatment of developed tuberculosis, and the success with which they have been credited commends their adoption in the largest number of cases.

Of the more general appreciation of the utility of the open-air treatment of pulmonary tuberculosis, evidence is afforded by the activity going on on many sides in providing means for its employment in the case of those unable from their own resources to secure its benefits. Governments and states, and other public bodies, are at present vying with one another in the laudable endeavor to make conditions easy for even the poorest tuberculous patient to avail himself of the advantages of the open-air treatment. Thus, in Pennsylvania a plan has recently been proposed by the forestry commisioner, Dr. J. T. Rothrock, having in contemplation the establishment of suitably located camps on the various forest reservations of the state, where tuberculous patients unable to provide themselves with a change of climate may spend several months in the year living in the open air. The first of these camps is to be established on a reservation in Clinton County, at an altitude of 2000 feet above sea-level, and having an area of 45,000 acres. Here it is proposed to erect large tents, with permanent foundations and anchorage, in order that they shall be as nearly as possible storm-proof. Each tent is to be provided with a heavy wooden floor, and separated by a distance of 15 feet from other tents. Along the front a covered wooden platform raised from the ground will be erected, so that the invalids need not be deprived of exercise on rainy days. The state is not to to be asked to contribute any money for the enterprise, as enough funds have been subscribed to meet the necessary outlay. The patients will be expected to provide their own means of subsistence. They will be required to adhere rigidly to the fish and game laws, and all laws for the preservation of forests, including precautions in the use of fire. Should the plan be successful, a second camp will be established in Dauphin County, overlooking the Lykens Valley, at an elevation of 1400 feet. Ultimately it is hoped to establish similar camps on every healthy forest reservation of the state.

The plan outlined is one to be commended. It is worthy of imitation, and on its merits is deserving of success. It will provide the means, otherwise unattainable, for restoring to health and usefulness a considerable number of victims of a disease recovery from which is yearly becoming more hopeful. Pulmonary tuberculosis should no longer be designated "consumption," as it is merely one of a number of acute infectious diseases capable of prevention, amenable to intelligent treatment, and susceptible of cure.

ANTIVISECTIONISTS AND MISREPRESENTATION.

Dr. Keen's letter, published in our last issue, ought to give a quietus—but it probably will not—to the blatant individuals who, with all their self-righteousness, have, as he shows, descended to the meanest arts of misrepresentation. The antivivisectionists have had their say uncontradicted so long that they apparently felt that their license to misrepresent was unlimited, and that they did not need to respect the ordinary rules of morality, more especially the ninth commandment. The welfare of the brute creation is their holy cause, judging from their average literature, but their diversion into philanthropy by raising the bogey of human vivisection has resulted disastrously. Dr. Keen certainly dissects their statements unsparingly, supporting by the most positive facts his charges of indefiniteness and garbling in their evidence before the Senate committee. Whatever may have been the personal responsibility of the president of the humane society for the facts as shown up by Dr. Keen, he ought to feel deeply humiliated at the exposure he has thus brought upon himself and the society he represents. It will stand on record, however, and no amount of abuse or further falsifying will alter or obscure the evidence of their disreputable methods. It is a pity that the cause of humanity to the lower creatures should be so encumbered with extremists who see nothing beyond the immediate objects of their solicitude, and unscrupulous advocates who do not hesitate to bear false witness against their neighbors. The medical profession is the humane one *par excellence*, but its first regards are for the welfare of humanity and it does not exalt the welfare of the brute over that of mankind.

THE DUTY OF THE PHYSICIAN TO THE STATE.

The recent utterance of a Philadelphia judge to the effect that it would be better that a patient should die rather than that a physician should neglect a judicial summons, has stirred up the lawyers as well as the doctors. The physician's standpoint has already been given editorially in The Journal,[1] but it may be of interest to note how it is viewed by the legal profession. The *New Orleans Times-Democrat* has taken the trouble to obtain the opinion of a number of leading members of the bar and judges upon the course of the judge, and their unanimity in condemnation of the opinion is striking. The expressions, "unreasonable and arbitrary," "not ruled by the ordinary law of common sense," "absurd," "inhuman," "brutal in its effects," are some indications of how the judge's action and statements are appreciated by his legal brethren. If he is at all sensitive to public opinion he will not be likely to repeat his action, which one can hardly believe was prompted by any deliberate consideration of the facts. Judges, however, are the men who, more than others, should guard their speech and action from any suspicion of inconsiderateness, and if they make mistakes such as that of this Philadelphia jurist, must suffer for it accordingly in public and professional estimation.

THE X-RAY IN QUACKERY.

It is a little remarkable that so striking a discovery, and one that impresses itself so strongly on the popular imagination as does the x-ray should have been left so long unutilized by the quack. This perhaps is due in part to the fact that some knowledge of the scientific side of electricity is supposed to be required, the Crookes' tubes and other apparatus being a little above the intelligence of the average charlatan, and in part to the fact that the regular profession has progressed so rapidly in discovering its remedial and diagnostic utilities that the quacks could not well keep up to them. This state of things, however, can not be expected to last, and now we have advertising specialists proclaiming the special advantages of the x-ray apparatus in their hands for modest females, enabling them to be examined without disrobing or otherwise exposing themselves. A comic paper in the early days of the x-rays contained a picture of a couple of skeletons, one sitting in the other's lap, worked up with all the expression of which these ground plans of humanity "far too naked to be shamed," are capable by the limner's art, but the aforesaid specialist's particular method of utilizing Roentgen's discovery strikes us as novel and entertaining. Still, perhaps the wonder is that it had not been thought of before, for the buzz and the blue flames with brass and glass accessories would go far to create the mental impressions desired by the quack, and the unquestioned scientific associations of the methods would help to increase his victim's confidence. We may probably expect to hear more from time to time of this discovery as employed as an adjunct to quackery, for which in several respects it has a peculiarly happy adaptability.

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[1] February 9, p. 387.

MEDICAL ANARCHY IN TEXAS.

The fact that a Texas decision made all diplomas of whatever character qualifications for practice, has already been noticed in The Journal. This places Texas in about the lowest grade among the states, but it seems still lower depths can be reached. The *Texas Medical News* for January publishes a letter, received by a medical student in Galveston, in which the writer says he has a friend on one of the state boards of medical examiners who informs him "that one of the other state boards is clandestinely advertising. for applicants for license and assuring them of same if they will only appear before said board. And because of this. this friend of mine says to me: 'You offer license to any worthy and competent young man that you may find and I will furnish same.' So, doctor, if you desire a permanent state license for the practice of medicine and are willing to pay $25 for them, why, you can write me." The writer goes on to say that the offer is "no humbug, but good goods," that he is a regular practicing physician, etc., and to ask that it be treated confidentially and if a license is not wanted to have nothing said about it. As a commentary the *Texas Medical News* reproduces a clipping taken from the *Dallas News* of a recent date, giving an account of twenty-seven young medical students from a Memphis college. all Texans, passing the district medical examiners in Texarkana, some of whom returned to finish their studies while others proceeded at once to their homes to hang out their shingles without further preliminaries. A diploma-mill of the Armstrong type has heretofore been our ideal of the extreme of degradation of medical qualifications, but a district examining board of Texas, appointed by the district judges, selling licenses to practice at $15 to $20 a piece, goes it one better. Between the quacks and their legal friends and sponsors there would seem to have been, up to date, pretty nearly medical anarchy in Texas. The medical practice act just passed (see Medical News column) was certainly badly needed.

SAN FRANCISCO AND THE PLAGUE INVESTIGATION.

The Journal has referred to the plague in San Francisco on several occasions, and some of our readers may think we are too insistent in expressing our views in regard to what may seem of local interest. An apology is not needed, however, as the question is one not only of national but of world-wide importance. There has been much opposition to the efforts of the Government representatives—those connected with the U. S. Marine-Hospital Service—by the newspapers of San Francisco and, we are sorry to say, by a few medical men, and the Government decided to send a commission to investigate and report on the conditions found. The men selected for this commission are those whose ability, honesty, and scientific judgment are above criticism, representing three great medical centers, and, moreover, well known to the profession generally throughout the country. Their testimony will be held conclusive, whatever their verdict may be. Of the members of the commission, Drs. Barker of Chicago, and Flexner of Philadelphia, have already made a study of the plague in the Orient, having been sent to Hongkong and Manila for the special purpose of studying the diseases there prevalent. Their well-known scientific attainments made them especially prominent and no better selection could have been made by the Secretary of the Treasury. Dr. Novy of Ann Arbor, the third member, has long been one of the leading authorities on bacteria and toxins in this country, and his opinion will carry equal weight. According to reports, the members of the commission have already attended the autopsies of not less than six fatal cases of plague that have occurred since their arrival on the Pacific Coast, and one of these, it is further stated, was under observation by them four days before death. We also learn that for a short time it was feared one of the members of the commission had been infected from these cases, but this has fortunately turned out not to be a fact. Thus far the members have neither collectively nor individually given utterance to any data or opinions publicly or privately, but the above data were obtained from other reliable sources. The report, when it appears, will settle the question as to the existence of plague in California.

THE TOXICITY OF NORMAL URINE.

The significance of reports as to the toxicity of the urine in the presence of various morbid states will be great or little accordingly as the urine may possess toxic properties or not under conditions of apparent health. Clinicians have at different times sought to estimate the gravity of a number of diseases from a study of the toxicity of the urine, although it has been pointed out that normal urine also may be capable of injurious effects. In explanation of the latter, it has been suggested that they may be due to suspended solid elements, to the products of fermentation and to the presence of potassium salts. With the object of determining the degree of toxicity possessed by normal urine, as well as the nature of the responsible substance or substances, Dresbach[1] collected the urine, usually to the amount of four liters, from healthy adults, who were not and never had been users of tobacco, and prepared an extract, which was injected in concentrated watery solution into white mice in doses varying from 3 to 7 minims. The smaller amounts gave rise to somnolence, spasmodic movements and clonic convulsions, irregularity and difficulty in breathing, exophthalmos, dilatation of the arterioles, exaggeration followed by abolition of the reflexes, while large amounts caused death. On evaporating the extract to dryness, considerable residue remained, but this could easily be destroyed by heat, leaving practically no ash. It was thus shown that no mineral matter was present. Tests for xanthin compounds likewise yielded negative results. It is pointed out that the results produced could not have been due to potassium salts or to any organic substance usually included in the list of substances in normal urine.

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[1] Jour. of Exp. Med., Dec. 15, 1900, p. 315.

THE HEREDITARY TRANSMISSION OF NEUROSES.

However heredity may act in the transmission of certain textural or nutritional disorders, or proclivities thereto, there can be no doubt of the fact that it does so act. It is true that disease may be conveyed directly from the mother to the fetus *in utero* through the placental circulation, but such a manifestation is in no sense an expression of hereditary transmission. Clinically speaking, it is not disease per se that is transmitted by heredity, but rather the morbid condition of tissue that either underlies or predisposes to disease—and this, it is to be presumed, is specific in the individual instance. In no class of affections is the influence of heredity as an etiologic factor more conspicuous than in the diseases of the nervous system, and especially the psychoses and neuroses; and this fact points the way to certain prophylactic possibilities. Thus, epilepsy, particularly if of the so-called idiopathic type, is often of distinctly hereditary origin, and the adoption of rational and practicable measures looking to the restriction of marriages and procreation by the unfortunate victims of this disease would aid materially in limiting its prevalence. Such measures must depend for their enforcement largely on the intelligence and self-control of the community rather than on arbitrary and rigorous legislation. An instance illustrating the pernicious influence on the offspring of epilepsy in the parent is cited by Bourneville and Poulard in *Progrès Médical* for September 29. A young married man in whom, without obvious cause, epileptic seizures began in the 30th year, begot eight children, two of whom died of athrepsia and one of cholera infantum. Of the remaining five, one was the subject of petit mal and of violent outbreaks of bad temper; another was the subject of grand mal, with hallucinations of vision and disturbances of sleep; and one was neurotic and suffered from night-terrors. From a consideration of cases like the foregoing, which are by no means isolated, it is not surprising that the authors reach the conclusion that marriage on the part of the subjects of epilepsy and epileptoid psychoses and neuroses should be forbidden or strongly discouraged.

THE INFLUENCE OF BACTERIA IN THROMBOSIS.

Thrombosis, especially of veins, is a not infrequent complication of infectious diseases such as pneumonia, typhoid fever, puerperal and other pyemic diseases. Thrombosis is also seen in so-called marantic states, in which death is often hastened by terminal infections. Welch, in his article on "Venous Thrombosis in Cardiac Thrombosis,"[1] states that micro-organisms have been found in a large number of thrombi in cases examined in his laboratory. There seems to be but little experimental evidence in favor of the infectious nature of thrombosis under these conditions. The recent work of Jakowski,[2] however, is quite suggestive. He injected sterile cultures or solutions of toxins of typhoid and of diphtheria bacilli into the circulatory blood of rabbits and guinea-pigs. After the injection a rubber band was placed around an extremity or an ear for one hour and then removed. Suitable control experiments were made and the animals killed twenty-four to seventy-two hours after the injection. Thrombi were not found in the control experiments in which bacteria or toxins were injected without compression of the vessels or in which compression was made without injection. In those experiments in which injection and compression were made clots were found constantly after the introduction of typhoid bacilli, but not so definitely after injection of typhoid *toxin*; living diphtheria bacilli were injected in these cases and in two thrombi were found after compression, but diphtheria toxin gave negative results. In a previous set of experiments with bacillus coli communis thrombi developed quite freely. Presumably the bacteria injected become implanted on the intima at the site of the compression, and multiplying they produce toxins that lead to the precipitation of fibrin. When toxins alone are injected the dilution becomes so great that they have no effect. To what extent these results are applicable to human pathology is uncertain, but surely they are suggestive. The exact manner in which bacteria induce thrombus formation will remain unknown until the chemistry and physics of coagulation are understood more clearly than now.

Medical News.

CALIFORNIA.

An osteopath of Santa Cruz, has been released from jail on a bond of $500, on condition that he leave the state.

The medical bill has been passed by the senate and will now, unless unforeseen-contingencies arise, become a law.

The health bill, which appropriates $100,000 as an emergency fund to be at the disposal of the governor and State Board of Health, to be used in case of emergency, has passed both the house and senate and will become a law.

Mary's Help Hospital is to be built on a large plat of ground on Guerrero street, San Francisco. The building will be for the exclusive use of women and children. The late Mrs. Kate Johnston left a bequest of $250,000 for the erection. equipment and maintenance of the hospital.

DELAWARE.

The Delaware State Hospital, at Farnhurst, has been granted an appropriation of $20,000 to cover the deficiency of $17,000 reported by the trustees and to provide for current unpaid bills.

Bills have been read and referred in the house of representatives, establishing a bacteriologic and pathologic laboratory at Delaware College, and extending the powers of the State Board of Health.

The Delaware Hospital, Wilmington, will open its new building in a short time. Its trustees announce that they have raised $21,657 of the $39,600 required to erect and equip the building, and make an appeal to the people of the state to contribute the $18,000 deficit, that the hospital may be free from debt when its new building is opened.

An amendment to the laws governing the admission and practice of physicians has been introduced by Senator Abbott, providing that whenever a physician who is a resident of the state and who was duly qualified to vote for representatives in the general assembly at the last general election prior to his application shall apply to the State Board of Medical Examiners for a certificate, it shall grant it without examination upon his presenting to the board a diploma from a reputable medical college, and on satisfactory proof that he had been in active practice of his profession at least ten years in any other state of the United States.

ILLINOIS.

The Rockford City Council has decided that physicians charge too much and so has cut down bills presented to it from 27 to 40 per cent.

Consumption has decreased in the state penitentiary at Joliet, so that, while in 1895 thirty-nine deaths were reported as due to this disease, in 1900 only eight occurred. This appears to be due directly to the segregation of tuberculous patients.

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[1] Trans. Am. Assn. of Phys., 1900, xiv.

[2] Centralbl. f. Bact., 1900, xxviii, 801-809.

A state sanatorium for tuberculosis is provided for in a bill recently introduced in the lower house. The bill was framed by Dr. John A. Robison, Chicago, and is endorsed by the Illinois State Medical Society, the Illinois Society for the Prevention of Consumption, and the State Board of Health. It appropriates $200,000 for the purchase of a site, erection of a building, and maintenance for one year.

Chicago.

Chicago's mortality for the week ended February 23 was 511, or an annual death-rate per 1000 of 15.68. Of the deaths, 172 were due to diseases of the respiratory system, and 26 to violence.

Dr. S. Cecil Stanton has just received an appointment of contract surgeon in the United States Army, to be stationed in Chicago. Dr. Stanton has been doing work in connection with the government's recruiting station here for some time.

The indictments against Dr. August M. Unger, in connection with the life insurance case of Miss Marie Defenbach, which he sought to have quashed, will stand, as Judge Holdom, on February 21, overruled the motions to quash in each of nine counts in each of three indictments.

The smallpox situation is improving; 10 new cases were discovered last week as against 17 the week before. The total up to February 23 is 27, with no death; 13 have been discharged from the isolation hospital, and 33 remain under treatment. The prompt discovery and isolation of cases and the wholesale vaccination of the exposed neighborhoods are relied upon to keep the disease under control.

The health department has issued a warning that debilitating causes of all kinds—alcoholism especially—predispose to attacks of pneumonia. Exposure to sudden changes of temperature should be avoided; the feet kept dry and warm and the throat and chest well protected; fasting rather than indulgence should be observed. The higher the bodily condition the less favorable is the growth and virulence of the pneumonia germ. The laboratory examinations show a notable decrease in the findings of the influenza bacillus, indicating that the disease is declining; on the other hand, the organism of pneumonia is found in increasing numbers and there is a strong probability that, with the usually trying March weather, there will be a marked increase in the prevalence of this malady.

INDIANA.

St. Margaret's Hospital Staff was organized February 15, with the following officers: Dr. James T. Clark, president; Dr. Cyrus W. Campbell, vice-president, and Dr. H. Edgar Shanes, secretary.

The faith-curers sustained a serious reverse February 19, when the senate voted to accept a favorable report on Senator Wood's bill requiring believers in faith cure to call medical aid in the illness of children and dependents. The bill makes it a felony to withhold medical aid from children and other dependents when such dependents die for the lack of medical aid.

KANSAS.

Dr. Ralph C. Henderson, Erie, has been appointed pension-examining surgeon at that place.

Sherman County has quarantined against Norton, Almena, Sharon Springs and all other towns infected with smallpox, until further orders.

Dr. Irwin E. Bennett, U. S. A., formerly of Leavenworth, has been promoted to a captaincy in the medical department. He is now on duty with the United States forces in China.

MICHIGAN.

The Lansing Hospital Staff has been organized with Dr. Rush J. Shank, president, and Dr. L. Anna Ballard, secretary.

Dr. Harry B. Britton, Ypsilanti, has been appointed a member of the board of medical pension examiners, to succeed Dr. Frank K. Owen.

MINNESOTA.

Dr. George H. Overholt, Kenyon, has been appointed health officer and placed in charge of the smallpox cases in Holden.

Daily inspection of the public schools of Minneapolis has been inaugurated, and a staff of fifty medical inspectors has been appointed to carry on the work.

Dr. Geo. D. Haggard, Minneapolis, Minn., has presented a number of wax and plaster models of smallpox eruptions to the medical department of the University of Minnesota.

After the Quacks.—According to the *Northwestern Lancet*, the Minnesota State Board of Medical Examiners has recently done good work in Minneapolis, in suppressing quackery. Two local advertising quacks have been obliged to discontinue their practice, at least under their own names. A third, not a physician, but representing himself as one, has been bound over to the grand jury.

Proposed Legislation.—A bill endorsed by the state medical society has been introduced, providing for a state board of medical examiners of twelve members, to be appointed by the governor from the different schools of medicine. The board can dispense with examinations in cases of practitioners authorized to practice in other states, or their payment of a $50 fee, when moving into Minnesota, provided said states demand qualifications of equal grade with Minnesota and extend the same privileges to practitioners holding Minnesota licenses.

NEW JERSEY.

Dr. Paul Mecroy, of Camden, has been appointed physician and surgeon of the Pennsylvania Railroad, to succeed Dr. Dowling Benjamin.

Christ Hospital's council and staff gave a dinner to Dr. John A. Robinson, retiring house-surgeon, in the sun parlors of the hospital, Jersey City, February 14.

The State Board of Health is forcing New York physicians who practice on the west side of the North River, to register and obtain license to practice in New Jersey.

NEW YORK.

Dr. Clarence V. Gray has been appointed health officer of Elba.

Dr. Harriet M. Watson has been appointed resident physician at the Albion House of Refuge.

The Binghamton health board has passed a resolution that houses where typhoid fever or measles exist shall not hereafter be placarded.

A bill has been introduced in the Assembly to provide for sending indigent persons requiring medical attention to the nearest hospital approved by the State Board of Charities.

Dr. Patrick J. Barrett, Utica, has been placed in charge of the isolation hospital, and Dr. Fred J. Douglas has been appointed city health officer vice Dr. Wallace Clarke.

The bill to abolish the State Board of Health, and substitute a single commissioner, is now before the governor. The commissioner is to be appointed by the governor at a salary of $3500.

Dr. Charles H. Andrews, Bergen, has been promoted to captain in the medical department of the army, and appointed a member of the examining board at San Francisco to examine volunteers preliminary to muster-out.

Regulation of Sale of Poisons.—A new state law places greater restrictions on the sale of poisons than were ever specified by any other measure. No substance which, in the words of the law, "according to standard works on medicine or materia medica, is liable to be destructive to human life in quantities of 60 grains or less, shall be sold at retail or furnished without being labeled with the name of the article and the word 'poison' and the name and place of business of the seller plainly printed in red ink." A record must be kept of the more dangerous poisons, as arsenic, cyanid of potassium, hydrocyanic acid, cocain, morphin, strychnin, and all other vegetable alkaloids and their salts. A complete record, including the name of the purchaser, his address, the amount of poison sold and date of sale, must be kept where it can be inspected at any time by the proper authorities, and must be preserved for five years.

Buffalo.

Dr. Nelson G. Russell has been selected assistant surgeon of the 65th Regiment.

The board of health has prepared an ordinance against expectoration in cars and public places, and also one providing that bottles used for milk shall not be used for other purposes.

The department of health report for January shows the death-rate per 1000 to be 18.08. Of the 531 deaths, 83 were from communicable diseases. The total deaths for January were 531, as compared with 437 in January 1900.

New Consumption Hospital.—Ground has been broken for the consumption hospital on the Erie County Almshouse grounds, which is to replace the former structure burned last March. The cost of the building is to be $50,000.

The ninth annual report of the Charity Eye, Ear and Throat Hospital of Erie County shows 1983 new cases treated during the year. The hospital authorities are well pleased with the workings of the new law which makes it a misdemeanor to obtain treatment under false pretenses.

New York City.

Dr. Edith B. Blackwell has been appointed resident physician and teacher of physiology in the State Normal School at Greensboro, N. C.

The New York Skin and Cancer Hospital has received a second donation of $5000 from Miss Emily S. Watson, New York, to endow a free bed.

The Montefiore Home for Chronic Invalids has changed its name to the Montefiore Hospital, because the latter name more accurately describes the function of the institution, whereas its former title had led many persons to suppose that it was a permanent residence for invalids.

Clinical Lectures on Syphilis.—The New York Skin and Cancer Hospital announces a course of clinical lectures on Syphilis, by members of the visiting and consulting staffs, on Wednesdays during March and April, and May 1. The lecturers are Drs. L. Duncan Bulkley, Abraham Jacobi, D. Bryson Delavan, David Webster, Edward D. Fisher, Edward G. Janeway, and Willy Meyer. These lectures are free to members of the medical profession on presentation of their professional cards.

Smallpox.—During the past week between 20 and 30 new cases of smallpox have been reported from widely separated sections of the city, 13 in one day; and 3 with the disease far advanced, walked into the Harlem Hospital in the course of three hours. The Health Department has issued a statement calling the attention of the public to the fact that the disease is not abating, and that they are now only vaccinating about 30 persons daily whereas, a few weeks ago, the daily average was 2000.

OHIO.

The Arcadia Board of Health has been organized with Drs. Madison G. Baldwin and Robert B. Taylor as its medical members.

Dr. Frederick C. Jackson, formerly of Columbus, now an acting-assistant surgeon in the Army, on duty in the Philippines, has been made captain and assistant surgeon of volunteers.

A fire broke out in the kitchen of the Cincinnati Hospital, February 19, and for a time threatened the destruction of the entire building. In the attempt to put it out several of the hospital employees were severely burned.

The Divine Healer.—The case of "Dr." Yaeger, which, as mentioned in THE JOURNAL of last week, was continued for a week, came up in Squire Winkler's court, Cincinnati, February 23. She was bound over to await the action of the grand jury for practising medicine without a license, and was released on her own recognizance of $500.

PENNSYLVANIA.

Smallpox has been reported during the last week in eight localities in the state.

Measles is prevalent in Cambridge Springs, and up to this time about one hundred cases have been reported.

New Hospital for Allegheny.—The Allegheny General Hospital will probably be soon supplanted by a new institution to cost about $350,000. Already $180,000 has been subscribed and the state will be asked to give $100,000.

Philadelphia.

The Administration Building of St. Timothy's Hospital, Roxborough, was damaged by fire and water to the extent of $2000.

The public baths of the city were patronized during the past year by 108,000 persons; there was a net deficit for the year amounting to $1,481.89.

Quiz Course.—The Medico-Chirurgical College announces a special quiz course for the preparation of candidates for the medical corps of the United States Army, Navy and Marine-Hospital services and for state board and hospital examinations.

Rush Hospital for Consumption held its annual meeting February 19, and plans were announced for a considerable enlargement to the facilities offered by that institution. The number of cases treated during the past year was the largest since the hospital was opened.

TEXAS.

The medical examining board of the eighth judicial district has elected Dr. Joseph D. Beckton, Greenville, president, and Dr. Robert L. Combs, Cooper, secretary.

A committee from the legislature has gone to Galveston to investigate and report on the needs of the state medical college at that place. The board of regents has asked for an appropriation of $60,000 to restore the college buildings which were damaged by the storm, and of $45,000 for the maintenance of the institution.

GENERAL.

Medical Officers' Association.—The annual meeting of the Association of Medical Officers of the Army and Navy of the Confederacy is to be held at Memphis, Tenn., May 28 to 30. All surgeons, assistant surgeons, acting-assistant surgeons or contract physicians and hospital stewards of the army and navy of the Confederate states, and all regular physicians who served honorably in any capacity in the confederate army and navy, and all regular physicians who are sons of confederate veterans are eligible to membership. Dr. A. L. Elcan, Memphis, Tenn., is the secretary.

Practice in Texas.—A medical practice act has just been passed by the legislature and approved by the governor. It repeals all previous laws and establishes three boards of medical examiners to be appointed by the governor on the recommendation of the state medical societies of the regular, homeopathic and eclectic schools. These boards, which shall contain nine members each, shall meet regularly twice a year at certain definite times and places, due notice being given, and examine all persons making application for licenses for practice. The examinations will include the following branches: anatomy physiology, chemistry, materia medica, histology, pathology, practice of medicine, surgery, diseases of the eye, ear, nose and throat, obstetrics, gynecology, hygiene and medical jurisprudence. The application must be in writing and accompanied with a fee of $15, excepting where it is simply for the practice of midwifery, where the fee shall be $5. A diploma from a satisfactory source is a requisite, the boards apparently being the judges as to its merits. The funds realized by the fees shall go toward the payment of the necessary expenses of the boards of examiners, each board receiving such fees from applicants who appear before it. The exceptions to the provisions of this act are: all those who began practice of medicine in the state prior to Jan. 1, 1885, and all those who began practice since that time, and who have complied with the state laws in effect prior to the passing of this act, provided that those who have diplomas recorded since January, 1891, shall present to said boards of medical examiners satisfactory evidence that their diplomas were issued by a bona-fide college of respectable standard. The law contains a clause providing that newcomers in the state, who have licenses granted by another state board of medical examiners, properly certified and showing that the standard of the requirements of the medical laws of said state or territory are equal to those provided by this act, shall also be permitted to practice on payment of the usual fees. Any person shall be regarded as practicing medicine or surgery within the meaning of the act who shall profess the pursuit of a physician or surgeon and shall offer for practice, as such, for those needing medical or surgical aid and shall charge money or other compensation. The act shall be construed to include persons not pretending to be physicians, who offer for sale publicly on the streets remedies not manufactured and compounded within the state, which they recommend for the cure of disease. The provisions of the act do not apply to persons treating diseases, who do not prescribe or give drugs or medicine. The law, therefore, unfortunately leaves a large gap for osteopaths, "Christian scientists," and all that sort of quackery.

CANADA.

The Tuberculin Test.

Professor Adami, of McGill, Montreal, who has always taken a lively interest in the subject of the tuberculin test, considers it unfortunate that the breeders throughout Canada should be advocating the repeal of the legislation concerning the employment of this test in cattle. He considers the test an absolute necessity for safety in that high-bred herds, by reason of their perpetual inbreeding, are very liable to tuberculosis. A large proportion of the pedigree cattle of England are affected, and against them the Argentine Republic has issued prohibitive legislation and the United States has imposed very severe quarantine regulations. Certain breeders in Canada are thus trying to evade the American reuglations by bringing in cattle from England and then exporting them across the line as

Canadian bred and born cattle. Dr. Adami considers this would be a most retrograde step if Canada would cease employing the tuberculin test, a test which is steadily growing in favor in England, France and Germany. He further considers that the alarm concerning the finding of the tubercle bacillus in one of Koch's preparations, tuberculin R., is misplaced, and that the fear of the cattle men may be set at rest as the manufacture of this product has been so modified lately as to make the survival of the bacillus an utter impossibility; and then tuberculin R. is too expensive to be employed on cattle, being reserved for the treatment of human beings alone.

The Asylums of Quebec.

The last annual report of the Asylums of the province of Quebec has been laid on the table of the legislative assembly now in session. This gives the total population of the asylums of that province, in the year 1899, as 2981, and the cost of maintenance $314,157.48, both figures showing an increase over those of 1898. The three principal asylums are now in a satisfactory condition. They are the Quebec City Asylum, the Verdun Institute and the Longue Pointe Asylum. It is noticed that the percentage of cures has been somewhat less than for the previous year. In the Quebec asylum for 1898, it was 41.62; for 1899, 31.75; Verdun, 1898, 43.63; 1899, 33.33; Longue Pointe, 1898, 27.35; 1899, 25.8.

Montreal General Hospital.

The medical superintendent's report showed that 667 patient's were treated to a conclusion during the past quarter. Of these 64 died, or 9.5 per cent. If the number who died within three days of their admission to the hospital were deduced the mortality would be reduced to 5.7 per cent. The daily average number for the quarter was 180, and the average detention 23.5 days. In the out-door department there were 10,733 consultations, an increase of 1,352 over the corresponding quarter of 1900. The financial position of the institution has not been good for some time back; and a proposal was made at the meeting to charge every patient at the out-door department five cents for medicine. The committee of management will look into this matter and report at a later date.

Montreal Civic Hospital.

So repeated and bitter have been the attacks on the condition of the contagious disease hospital, both from prominent medical men of the city and the citizens in general, that the medical superintendent, Dr. Laberge, and the lady superintendent have intimated their intention of resigning. The chairman of Montreal's hygienic committee has been most energetic in trying to secure appropriations for a new institution, but there seems to be a deadlock between the French and English sections in council as to whether one combined hospital for both nationalities or a dual system be adopted.

"Christian Science."

An investigation was recently held in Peterborough, Ont., into a case of death from typhoid fever under treatment by the "Christian Scientists"; an another in Victoria, B.C., on the death of a child from laryngeal diphtheria. In both instances strong verdicts were returned by the coroners' juries, condemning the practices of "Christian Scientists," verdicts which are healthy indications that the public is awakening to the danger of allowing these people to continue endangering the health of the community from disregard of isolation in communicable diseases.

LONDON.

Outbreak of Typhus Fever in Manchester.

A remarkable outbreak of typhus fever has taken place in Manchester, a city from which the disease has been absent for many years. On December 31, two young women were admitted to the hospital suffering from typhoid fever. Five days later two girls were admitted, one suffering from typhoid and the other from typhus fever, and on January 8 a third couple suffering from typhus fever. It was then discovered that all these girls worked at the same establishment—a rag-sorting warehouse. A remarkable feature was that all the persons attacked were engaged in the woolen-rag department, not one in the cotton department being affected. Nearly all the girls live in Ancoats, one of the slums of Manchester, in great dirt and poverty. The source from which the rags were infected can not be discovered. As the disease was not discovered before the patients came in contact with others, there are now thirty cases in the hospitals. One girls seems to have communicated the disease to seven persons. On visiting her home, the medical officer of health, being unable to gain admittance, forced an entrance and found the father and two children in bed, all too ill with typhus to help themselves. Three deaths have already taken place. All the rags have been disinfected, besides the workrooms and houses of the patients.

The Late Queen and the Medical Profession.

Among the universal tributes of loyalty and affection evoked by the death of the queen, those which have come from the medical profession are not wanting in fervency. Her late majesty was always on excellent terms with the profession. whose services she valued highly. At the meeting of the Royal Medical and Chirurgical Society, of which the queen was patron, a loyal address of sympathy and homage to the king was adopted. The president, Dr. F. W. Pary, said that the Society was instituted about a century ago, for the cultivation of medicine and surgery. In approval of its laudable design it received a charter of incorporation from William IV., in which the king declared himself and his successors, if they should think fit, a patron of the Society. The queen followed in his footsteps. Lord Lister, in moving the adoption of the address, said that his was an inexpressibly melancholy honor. The medical profession, whose object is to prevent or relieve the physical ills of mankind, appealed always to her majesty's warm and sympathetic heart, and the profession never had a more loyal friend. All her medical attendants, if alive to-day, would speak with one voice. Nothing could be more striking than her complete confidence in her medical advisers and her submission to chloroform at a time when its use in midwifery was by no means generally recognized and in influential quarters opposed. Lord Lister said that he believed he was the only person who ever exercised on the queen the art of surgery. The occasion was a most critical and anxious one, but while she treated him with queenly dignity, nothing could exceed her kindness. The king has shown, during the past fortnight, that he inherited the grace and tact of the departed sovereign. He always honored and loved the medical profession. Witness all that he had done for Guy's Hospital, and the prosperity of the Prince of Wales' Hospital Fund, in which he took the keenest interest!

FOREIGN.

The antidiphtheria serum prepared in Milan, and recently referred to in these columns as having caused tetanus infection, has been collected in the laboratories of the Superior Council of Health and is to be submitted to experimental tests.

Collection Burned.—A fire in the old portion of the Pathological Institute at Berlin destroyed a cabinet of collections belonging to Virchow. The articles that were saved lost their labels, and Virchow mourns the irreparable loss to himself and to science of this collection of anthropologic and prehistoric relics.

Women as Internes.—A French medical woman has passed the competitive examination and has been accepted as an interne in the Paris hospitals. In 1886 Miss Klumpke was appointed "titular" interne, and five other young women have since been made "provisional" internes. The hospitals of Bordeaux and Rouen have also had women internes.

Deaths.—Dr. G. R. von Hochberger, of Carlsbad, died February 4, in his ninety-ninth year. He had been the recipient of many honors in his long and useful life. The president of the St. Petersburg Military-Medical Academy, Professor V. Paschutin, died suddenly while presiding at a meeting of the faculty of the Academy.

Hygiene of Postoffice.—According to *The Lancet* of February 16, an inquiry into the hygienic condition of the postoffice employees in Paris, with special regard to the presence of tuberculosis, showed that this disease was responsible for 36 per cent. of the deaths among the members of the staff, this being a much higher rate than the general tuberculosis deathrate for all France.

Death of Pettenkofer.—The progress of hygiene during the last century owed much of its impetus to Max von Pettenkofer, M.D., of Munich, who, depressed by the inroads of an incurable disease, recently shot himself. He was in his eighty-fourth year, and had been one of the earliest collaborators on the *Muenchener Med. Woch.*, some of his articles dating from 1854. Many international honors had been bestowed upon him.

Endorsement of Company Physicians.—The sixty physicians connected with the Munich Sickness Insurance Company No. 4, refused to accept lower terms than those previously agreed upon, and appealed to the other members of the profession to sustain them in their course. Of the 530 physicians who received this appeal, 509 replied, formally agreeing to comply with the request of the subscribers. Most of the remaining twenty-one have nothing to do with this kind of practice, so the results show a practically unanimous endorsement of the company physicians.

Progress of the Plague.—According to *The Lancet*, February 16, the suspicion that a case of plague had occurred at Cardiff has been verified, and a crusade against rats inaugurated, the sum of fourpence being paid for every one caught within the borough or port-sanitary district. A similar effort to diminish the rats at Cape Town, South Africa, followed the reports of the disease having gained a foothold in that city. On February 15 the cable announced twelve cases in the hospitals there, with two deaths up to that date.

Medical Societies in Spain.—The Spanish government has resolved to thoroughly enforce the regulations enacted in 1898, that no physician is allowed to practice unless he has inscribed his name as a member of the local medical society. Each town of more than 14,000 inhabitants must organize one of these societies or academies of medicine, to promote the moral and material interests of the profession and give advice on questions submitted by the national or municipal authorities or courts. The *Sem. Méd.* states that they are already organized in a large number of towns.

Correspondence.

Dr. Nicholas Senn and the Louisiana State Board of Health.

New Orleans, La., Feb. 6, 1901.

To the Editor:—I have read with much interest the article of Dr. Nicholas Senn, in The Journal of January 19, entitled "Costa Rica, its Physicians and Medical Institutions." It reflects great credit on this universal writer, but he has been misinformed in regard to some of his statements concerning quarantine. All that comes from the pen of one of such standing as Dr. Senn carries so much weight that it is impossible for me to allow to pass unnoticed some statements which are not justified by the facts.

On page 185 he says: "The quarantine system at the Port of New Orleans is, however, too complicated. There are two quarantine stations under the jurisdiction of the State Board of Health, which often at a distance decides whether or not a vessel should be detained, which often gives rise to great confusion and not infrequently enforces unnecessary quarantine."

The truth is that there is but *one* board of health regulating quarantine, and that is the Louisiana State Board of Health. The board of health of the city of New Orleans has no right to quarantine under the present law, Act 192 of 1898. The state board is unique and supreme.

There are at the mouth of the Mississippi River two inspection stations. The first is at Port Eads, on the outlet of the South Pass, where a preliminary inspection is made and from which vessels with cases of contagious diseases are sent to the Lazaretto, several miles higher up on Pass a l'Outre. The second station is the famous Mississippi River quarantine station on the east bank of the river, some fifteen miles above Port Eads, where vessels are re-inspected, disinfected and detained.

The Louisiana State Board of Health never at a distance decides whether or not a vessel shall be detained. On April 1, of each year, quarantine is *proclaimed* against the South American, Central American and West Indian ports by the Gulf and South Atlantic ports of the United States. All vessels arriving at those American ports, from the above quarantined ones, are inspected, disinfected and detained from five to eight days. Fruit vessels bringing perishable cargoes are exempted from detention and are permitted to unload at the wharf under certain conditions, and as long as the Central American fruit ports are free from yellow fever; but as soon as the resident medical inspector of the Louisiana State Board reports the existence of yellow fever at any fruit port, these special privileges are withdrawn or are modified for that port.

Further on, on the same page, the eminent writer states: "The best solution of this important and difficult question would be to place the Port of New Orleans under the jurisdiction of the Marine-Hospital Service, etc."

This expression is most unfortunate, especially as coming so soon after the signal failure of the U. S. Marine-Hospital Service to recognize the existence of yellow fever in time, at Port Limon last year. That service admitted the existence of the fever there several weeks only after the distinguished representative of the Louisiana State Board of Health, Dr. Will H. Woods, had advised the board of the presence of the fever at Limon, and after cases had occurred on fruit vessels plying between that port, New Orleans and Mobile. Mobile was guided by the reports of the representative of the U. S. Marine-Hospital Service and escaped infection only by enforcing the most rigid measures. Although Mobile had not actually recognized Limon as infected, she treated vessels from there as if the port was infected. Finally, she did proclaim Limon infected.

No one can protect us better than we can do it ourselves. The fact is, the people at those ports are so indifferent as to sanitary matters and are so little afraid of yellow fever, that they believe all of our fears are exaggerated. The day that sanitation shall occupy in their minds and practices the high position it does with us, then all reliance may be placed on them and matters will be much improved. Yours truly,

Edmond Souchon, M.D.
President Louisiana State Board of Health.

The Case of Governor Goebel and Bloodless Work.

Bowling Green, Ky., Feb. 18, 1901.

To the Editor:—My attention has just been called to a paper in The Journal of the 9th instant, by Dr. Dawbarn, of New York City, on "The Technique of Bloodless Work," in which is contained the following paragraph, evidently intended by the author as a criticism of the treatment of the case of the late Governor Goebel: "A recent sensational murder in politics, in another state, produced a bit of most antiquated and archaic surgery—according to the newspapers and several medical journals, and the statement went uncontradicted. I allude to the fact that in order to try to stop the bleeding from his wounded lung the surgeon bled him a pint or more from his arm! This plan has antiquity to recommend it, but nothing else. He died of shock, *apparently*, and we all know that hemorrhage invites shock. Had the extremities promptly been corded effectively, accumulating venous blood in them, the ending might well have been a different one."

The above paragraph is untrue, and its publication in The Journal, under the name of a surgeon who claims to be reputable not only does me, but the excellent medical men who were associated with me in the case, a gross injustice. Governor Goebel was not only not bled, but such a procedure was never even suggested, and the report went uncontradicted because no such thing had been published to my knowledge and, had I seen such a publication, I would hardly have expected that any medical man would believe it from mere newspaper rumor. Nor was there at any time serious hemorrhage, practically none externally, only about eight ounces having been found in the pleural cavity after death.

Our patient was in profound shock at first, cold, pulseless and lifeless, but responded with reasonable promptness to the hot saline intravenous injections, heart stimulants and external warmth which were resorted to within a few minutes after he was shot. While the salt solution was running in, the wounds were carefully cleansed and a temporary dressing applied. The patient was in bad physical condition before he was shot. He was never a very robust man, had been under high nervous tension for months, and had an attack of acute indigestion, vomiting freely, before leaving the hotel that morning. Under all of these disadvantages he rallied and did well until the end of the fourth day, dying from a violent foreign-body pneumonia, the bullet having passed through all of his clothing before reaching his body. Drs. Vance, of Louisville, Barrow, of Lexington, and Dandridge, Walker and MacKenzie, of Cincinnati, all distinguished surgeons and teachers, saw the case a few hours after the injury, and were all kind enough to warmly commend the entire treatment, being especially complimentary as to the almost immediate resort to the use of the normal salt solution. You can imagine my surprise at having the treatment unhesitatingly condemned by a man some hundreds of miles away, who is and was as ignorant of what was actually indicated and done as he appears to be of the courtesies due between professional gentlemen.

Snap diagnoses and absent treatment have heretofore been confined to magnetic healers and "Christian Scientists," and this brief experience leads me to hope that such methods will never be adopted by reputable professional men. Very respectfully, J. N. McCormack, M.D.

Another Fraud Solicitor.

Chicago, Feb. 15, 1901.

To the Editor:—I learn that several physicians in Chicago have been victimized, as I was, recently by a scoundrel professing to be the representative of a newspaper subscription agency. I presume the firm which he professes to represent is a reputable one, although I wonder that they do not seem more interested in apprehending this man and prosecuting him, as he is not only collecting money in their name, but forging their signature to checks made out to the agency.

As the magazines for which I subscribed failed to make their appearance some weeks after the visit of this agent, I addressed a letter to Moore's Agency, and received the following reply:

> Your favor of the 14th received, and in reply would say we have no agent by the name of W. R. Neal, and we do not offer any such list of magazines as you mention for $4.00. This man is a fraud, and we have had a great many complaints in regard to him, as he is traveling around through different cities in the West and carrying on this scheme. We do not have any traveling representatives and never allow the agent to present a receipt in our name, as we have thought it liable to lead to some such system of fraud. We have been unable to locate this man as he travels around from place to place, and we do not hear in regard to him until he has left each locality. If you can find any way by which you can secure him we would advise you to take such steps at once. We regret very much that he should have misrepresented himself as our agent and that we are unable to help you out in the matter. Yours truly (signed), W. H. Moore.

As this fellow seems to have victimized a number of physicians in the city, I think it would be well to warn others through the columns of your journal. Very truly yours,

John M. Dodson, M.D.

Feeding in Typhoid Fever.

Boston, Feb. 19, 1901.

To the Editor:—It has been noticed in several cases of fever, especially typhoid, that a total change from an animal food element in diet, and substitution of only vegetable elements was followed by lessened fever, and consequently better sustained strength of the patient.

I am informed that the typhoid bacillus generally develops much more freely on animal culture material than on vegetable, with perhaps occasional exceptions.

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The advance being made in the various departments of medical science is so rapid that it is practically impossible for one to keep up in the various branches of medicine. In fact, it is no easy matter to follow the literature, in one, much less all. There are workers in all fields in nearly all countries, and the results are published in scattered fragments. To collate, digest and analyze all that these fragments contain, and place the results in a compact form for easy reference, is the sphere of the annuals, which have become a necessity. These not only make it possible for the specialist to keep in touch with the progress made in his particular branch, but they make it possible for one to keep in touch with what is going on in every department of medicine. The year-book before us is one of the few annuals that does this well. The editor has associated with him the best men in the various fields of work, and the result is not only completeness, but, what is of greater moment, reliability. To say that the year-book for this year is as good as previous volumes is all that is necessary. It is now published in two instead of one volume, as formerly, and this is a decided improvement. The first volume is devoted to medicine, and includes pediatrics, pathology, nervous diseases, diseases of the skin, physiology, legal medicine, hygiene, physiologic chemistry, etc. The one on Surgery contains also chapters on obstetrics, ophthalmology, otology, laryngology, etc. As the volumes are sold separately this division will be a saving to those who are only interested in special subjects. A complete index with each volume makes ready reference easy. The illustrations are numerous, the mechanical work excellent, and the book as a whole everything that could be desired.

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The attempt to follow too closely the anatomic subdivisions of the canal has led to much repetition. This not only unnecessarily takes up much space which could be made use of to better advantage, but also often detracts from a clear conception of what actually is met with in practice, as for instance when contusions or subcutaneous injuries are separately described as affecting the stomach, the duodenum, the jejunum and ileum and the large intestine.

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Married.

James Henry Dittemore, M. D., Axtel, Kan., to Miss Margaret Kent, Troy, Kan.

Francis P. Dorsey, M.D., Hartington, Neb., to Miss Louise Pauline Lerch, Smith's Villa, Iowa, February 12.

Robert Leonard Morrison, Clarksburg, W. Va., to Miss Margaret Rathbone Paden, at Parkersburg, W. Va.

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Deaths and Obituaries.

William H. Egle, M.D., University of Pennsylvania, 1859, librarian and historian, died from pneumonia, at his home in Harrisburg, Pa., February 19. He served two years as surgeon of the Forty-seventh Pennsylvania regiment during the Civil War, and subsequently as a brigade surgeon in the national guard of the state. He was a member of the American Medical Association and other societies. During the past fifteen years Dr. Egle had been relatively passive in medical work, yet his sympathies, time and advice, were always freely given for the general advancement of medical science and the general good of the profession. His last years were almost entirely devoted to literary work and historical research. He had been state librarian in Pennsylvania since 1887 and brought the library to an exalted standard of efficiency. He was a corresponding member of nearly every one of the historical societies in the English-speaking world, and his contributions to the literature pertaining to local and state history and genealogy were many. At a special session of the Harrisburg Academy of Medicine, February 21, which was called to take action upon Dr. Egle's death, highly eulogistic remarks were made by several members of the Academy and resolutions of regret and sympathy passed.

Joseph H. Linsley, M.D., University of Vermont, 1880, died from meningitis, at his home in Burlington, Vt., February 17, aged 42. A year after his graduation he went to New York and was appointed instructor in clinical microscopy in the New York Post-Graduate Medical School, and a year later was made director of the laboratories of histology, pathology and bacteriology, doing in addition the pathological work of St. Luke's and the Presbyterian hospitals. In 1890 he went to Berlin and took a course in bacteriology under Koch. Later, he was made professor of pathology and bacteriology in the University of Vermont. His greatest work was in connection prise at having the treatment unhesitatingly condemned by a man some hundreds of miles away, who is and was as ignorant of what was actually indicated and done as he appears to be of the courtesies due between professional gentlemen.

Snap diagnoses and absent treatment have heretofore been confined to magnetic healers and "Christian Scientists," and this brief experience leads me to hope that such methods will never be adopted by reputable professional men. Very respectfully, J. N. McCormack, M.D.

Another Fraud Solicitor.

Chicago, Feb. 15, 1901.

To the Editor:—I learn that several physicians in Chicago have been victimized, as I was, recently by a scoundrel professing to be the representative of a newspaper subscription agency. I presume the firm which he professes to represent is a reputable one, although I wonder that they do not seem more interested in apprehending this man and prosecuting him, as he is not only collecting money in their name, but forging their signature to checks made out to the agency.

As the magazines for which I subscribed failed to make their appearance some weeks after the visit of this agent, I addressed a letter to Moore's Agency, and received the following reply:

> Your favor of the 14th received, and in reply would say we have no agent by the name of W. R. Neal, and we do not offer any such list of magazines as you mention for $4.00. This man is a fraud, and we have had a great many complaints in regard to him, as he is traveling around through different cities in the West and carrying on this scheme. We do not have any traveling representatives and never allow the agent to present a receipt in our name, as we have thought it liable to lead to some such system of fraud. We have been unable to locate this man as he travels around from place to place, and we do not hear in regard to him until he has left each locality. If you can find any way by which you can secure him we would advise you to take such steps at once. We regret very much that he should have misrepresented himself as our agent and that we are unable to help you out in the matter. Yours truly (signed), W. H. Moore.

As this fellow seems to have victimized a number of physicians in the city, I think it would be well to warn others through the columns of your journal. Very truly yours,

John M. Dodson, M.D.

Feeding in Typhoid Fever.

Boston, Feb. 19, 1901.

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Alexander Neil, M.D., Cincinnati College of Medicine and Surgery, 1863, surgeon throughout the Civil War, a well-known physician of Columbus, and a member of the American Medical Asssociation, died at his home in Columbus after a long illness, February 14, aged 62.

Harris O. Palmer, M.D., Dartmouth Medical College, Hanover, N. H., 1867, who had practiced for nearly thirty years in Hubbardston, Mass., died at his residence in that place from pneumonia, February 17, after an illness of one week, aged 60.

Horace G. Hill, M.D., Jefferson Medical College, Philadelphia, 1882, chief medical director of the Fidelity Mutual Life Insurance Co., a resident of Philadelphia, died at Wernersville, from la grippe, February 14, aged 42.

Almon G. Bruce, M.D., University of Wooster Medical Department, Cleveland, Ohio, 1870, a popular physician, and at one time mayor of Albion, Mich., died at his residence in that place, February 9, from apoplexy.

William E. Curtis, M.D., University of Nashville, Tenn., 1861, a member of the American Medical Association and a leading physician of Carroll County, Tenn., died at his home in McKenzie, February 9, aged 60.

Richard Searing Seaman, M.D., College of Physicians and Surgeons, N. Y., 1851, died at his home in Brooklyn, N. Y., on February 17. He had been in practice at Glen Cove, L. I., for more than thirty years.

Thomas F. Murdoch, M.D., University of Maryland, Baltimore, 1850, a practitioner of Baltimore for nearly half a century, died suddenly at his residence in that city, February 18, aged 81.

William Booz, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1877, an old resident practitioner and preacher of Hancock County, Ill., died at Carthage, February 20, aged 69 years.

Francis M. Bennett, M.D., Medical College of Virginia, 1881, died recently in Montgomery, W. Va. He was a member of the Fayette County Board of Health and a sanitarian of repute.

William Rice, M.D., University of Pennsylvania, 1860, for thirty years a resident, and twice mayor of Trenton, N. J., died suddenly at his home in that city, February 13, aged 61.

George L. Kirby, M.D., Long Island College Hospital, N. Y., 1860, died February 19, at the state hospital, Raleigh, N. C., of which he had been superintendent since 1894.

Hanly B. Potter, M.D., University of Buffalo, N. Y., 1874, of Lafargeville, N. Y., died February 18, while on a professional visit at Orleans, Four Corners, aged 61.

David W. McConnell, M.D., Starling Medical College, Columbus, Ohio, 1870, died at his home in Marseilles, Ohio, February 20, from pneumonia, after a short illness.

Daniel Handel, M.D., University of Iowa, Iowa City, 1875, was struck by a train at Onawa, Iowa, and died at his home in that place as a result of his injuries, February 19.

Jefferson S. Harbison, M.D., National Medical College, Washington, D. C., 1860, died at his home in Knoxville, Tenn., from Bright's disease, February 16, aged 69.

Lemuel Watson, M.D., Jefferson Medical College, Philadelphia, 1870, of Nebraska City, Neb., died from paralysis after a long illness, February 18, aged 76.

Henry Nichell, M.D., University of Buffalo, N. Y., 1857, a member of the American Medical Association, died at his home in Buffalo, February 14, aged 80.

William P. Manning, M.D., University of Maryland, Baltimore, 1869, died at his residence in Washington, D. C., February 9, aged 56.

G. Byron Lyman, M.D., College of Physicians and Surgeons, Baltimore, Md., 1878, died recently at his home in Yuba City, Cal.

John C. Tedford, M.D., Washington University, St. Louis, Mo., 1859, died at his home in Moberly, Mo., February 13, aged 75.

George T. Watkins, M.D., University of Louisville, Ky., died at his home in Kokomo, Ind., from dropsy, February 18, aged 66.

Thomas C. Neal, M.D., Castleton Medical College, Castleton, Vt., 1848, died at his home in Sugar Creek, N. C., February 9.

I. Newton Jones, M.D., Medical College of Ohio, Cincinnati, 1866, died February 21, from pneumonia, aged 57 years.

Levi Royer, M.D., University of Maryland, Baltimore, died at New Windsor, Carroll County, Md., February 10, aged 61.

Edward A. Glezen, M.D., Ireland, Ind., died at that place, February 12, from la grippe, aged 82.

Miscellany.

Cleansing the Hands. —The hands may be washed in pure carbolic acid without harm if they are washed in alcohol immediately afterward.

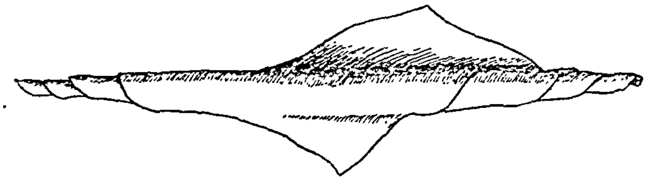
A Memorial to Queen Elizabeth's Physician.—This is to be erected in a niche in the main facade of the new town hall at Colchester, England. This marble statue of Dr. William Gilbert (1540-1603) is to be erected by the medical profession, and the minimum amount required is only £150, of which £130 has been contributed. Dr. Gilbert was a distinguished natural philosopher, as well as physician. His conjecture that terrestial magnetism and magnetism were allied emanations was confirmed more than two centuries afterward by Oersted and Faraday. There is as at present a handsome monument over his remains in the church of the Holy Trinity at Colchester, which was his native town.

Muscular Work and Food Digestibility.—The United States Department of Agriculture has issued its third bulletin upon dietary studies. This work was conducted at the University of Tennessee, from 1897 to 1899, by Dr. Charles E. Wait, professor of chemistry, and a corps of assistants. The drift of this report is that more fat is consumed in the South than is necessary; the leaner meats as beef and mutton should be more the vogue. More nitrogenous vegetable foods, as beans and peas, with less fat and starchy foods constitute a more ideal dietary. In this brochure attention is invited to the great value of the cow-pea as fulfilling most of the indications desired. "Experiments on the Effect of Muscular Work Upon the Digestibility of Food and the Metabolism of Nitrogen" is the title of the article in "Bulletin No. 89."

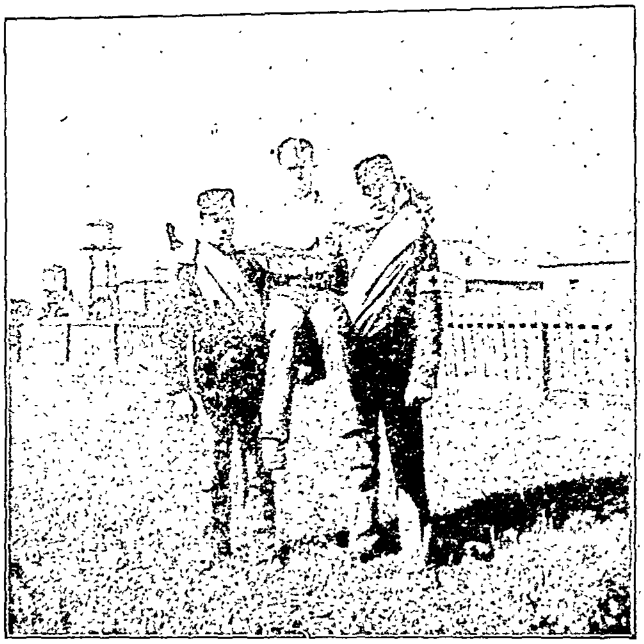
A Remarkable American: Dr. William Pepper.—The *British Med. Jour.* of February 16 publishes the following tribute, by W. T. Gairdner, to Dr. Pepper, who, he says, "was not only a great public benefactor, but one whose friendship I enjoyed in no ordinary measure during a visit to the United States in 1891. In that year I was at Washington, on the joint invitation of Dr. Pepper and Dr. Weir Mitchell, the one the retring president, the other the president-elect of the American Medical Congress. Previously to this, however, I had made a number of visits in New England, and had spent some very happy days with Dr. Pepper at Newport, R.I., where in the autumn season he allowed himself, I suppose, as much of a holiday as he ever had. I think I am justified in saying that there was no one on this side of the Atlantic who was more admitted to his intimacy than I was then, and in our correspondence during the succeeding years, up to within a very few weeks of his premature and sudden death. It was very easy even then to see that he was a man utterly regardless of self, and living only for the sake of his university and his many public functions. It was also not difficult to perceive that his mode of living, the incessant occupation and overstrain were such as to endanger the health and endurance of the bodily machine. I ventured to represent this to him—as I daresay others may have done—but only to find that as long as he did not feel positively ill his only notion of living was to get as much work out of himself as either body or mind would endure, regardless of all but the great interests and schemes with which his name was associated. He was Provost of the University of Pennsylvania at this time, and felt a noble pride in all that he had done and was doing for the higher education in that great center, where out of a large professional income he was devoting what he regarded as the superfluities (for he avowedly disregarded wealth for himself and for his family) with the most lavish and yet calculated munificence to the improvement of the medical, and especially the clinical, department of the University. Dr. Pepper must have been a hard and constant worker from an early period of his career. My first knowledge of him was when he was associated with Dr. Meigs in a work on the 'Diseases of Children,' which passed through several editions, and was—or perhaps still is—a leading work on the subject. His literary activity after this was unceasing, and I pleaded with him for his own sake to abandon some considerable portion of his literary or, alternatively, of his public labors, in order to devote himself more to his private and consulting practice. Some time afterwards he did, in fact, resign the provostship, but as he had at the same time assumed other public duties, I am far from certain that there was any material relaxation of his great and abnormal activity up to the time when he was compelled by sheer disability to leave all his work, and, as it proved, to seek renewed health in a journey which was terminated by his sudden death. He never gave me any hint of cardiac suffering either in conversation or correspondence; on the contrary, he led me to expect some day a pleasant return visit to this country, to which he always looked forward with joyful anticipation, but which was always postponed, more (as I understood) on account of the state of his wife's health than of his own. Few men, in as brief period, have become more endeared to me than Dr. William Pepper; and few men in his own, or any other country, can have lived a nobler life, or one more devoted to the public interest."

A New Blanket Litter.

The Surgeon-General of the Army has issued a circular inviting the attention of his medical officers to a method of carrying disabled men, devised by Acting Assistant-Surgeon C. E. MacDonald, U. S. A., Fort Yates, N. D., which appears to be of value for the transportation of a certain class of wounded in the absence of litters. The method requires the services of two bearers and the use of two blankets or shelter-tent pieces. It has been used for some time as an experiment at all first-aid drills at Fort Yates, and is regarded as preferable to the methods which have heretofore been employed. It has been tested also at the school of instruction for the hospital corps, at the U. S. General Hospital, Washington, D. C., with favorable results.



Each blanket or shelter-tent piece is folded, rolled or twisted into a cylindrical form on one of its diagonals. The two cylinders are placed side by side and their contiguous ends are tied together by reef knots. The bearers then raise the tied blanket rolls and adjust them, the one knot on the right shoulder of the right bearer and the other on the left shoulder of the left bearer, one blanket cylinder curving from shoulder to shoulder in front and the other behind. To prepare the blanket litter or seat for the patient the bearers kneel, the right bearer on his left knee and the left bearer on his right knee. They then pull the middle part of the posterior cylinder to the front underneath the corresponding part of the anterior cylinder which is at the same time drawn to the rear so as to form a sitting space of six or eight inches enclosed between the rolls. The patient is placed on this space and is supported behind by the contiguous arms of the bearers. Figure 2 shows them ready to march off with their burden. Acting Assistant-Surgeon MacDonald has used these blanket cylinders successfully as an extemporized litter for patients with the lower extremities immobilized by a rifle splint.



Societies.

COMING MEETINGS.

Medical Society of the Missouri Valley, Omaha, Neb., March 21, 1901.

German Congress of Otology.—The German Otological Society holds its annual meeting this year at Breslau, May 24 and 25. The arrangements are in charge of Professor Kuemmel, Thiergartenstrasse 53, Berlin.

John B. Deaver Surgical Society.—The John B. Deaver Surgical Society of the University of Pennsylvania held its fifth annual reunion in Philadelphia, February 11. Dr. Deaver presided and the twenty student members of the Society entertained about seventy-five guests.

El Paso County (Colo.) Medical Society.—This Society held its annual meeting at Colorado Springs, February 13, and elected Dr. Robert K. Hutchings, president; Dr. John O. Reddie, vice-president, and Dr. Frank L. Dennis, secretary and treasurer, all of Colorado Springs.

Medical Society of the City of Carrollton, Ga.—The physicians of Carrollton met on February 15 and organized a local society with the following officers: Dr. Stevens T. Harris, president; Dr. M. M. Hallum, vice-president; Dr. J. F. Cole, secretary, and Dr. Delvous Houseworth, assistant secretary.

Pomona Valley (Cal.) Medical Society.—At the meeting of this Society, in Pomona, January 31, the following officers were elected: Dr. Conley Heaton, Pomona, president; Drs. William A. Lillie, Ontario, and T. Hardy Smith, Pomona, vice-presidents, and Dr. Edward Henderson, Pomona, secretary and treasurer.

Western Ophthalmologic and Oto-Laryngologic Association.—Dr. W. L. Ballenger, Chicago, secretary of this Association, announces that the next annual meeting will be held in Cincinnati, April 11 and 12. Dr. Christian R. Holmes is chairman of the local committee of arrangements.

North Montana Medical Society.—At the regular monthly meeting of this Society, at Great Falls, Dr. Ernest Crutcher offered resolutions recommending the prompt enactment of a pure food law and of a statute governing the inspection of milk and dairies in towns of 1500 or more inhabitants. The resolutions were adopted.

Belmont County (Ohio) Medical Society.—The tenth annual dinner of this Society was held in Bellaire, February 22. Dr. J. Park West, welcomed the guests; Dr. James S. McClellan acted as toastmaster, and Drs. A. H. Hewitson, St. Clairsville, and Arlington W. Diven, Martins Ferry, responded for the nineteenth and the twentieth century doctor respectively.

Orange County (N. Y.) Medical Association.—A meeting of the members of the Fifth District Branch of The New York State Medical Association was held in Middletown February 12, and the Orange County Medical Association was organized. Dr. Milton C. Conner, Middletown, was elected president; Dr. Frank W. Dennis, Unionville, vice-president, and Dr. Charles I. Redfield, of Middletown, secretary and treasurer.

Chautauqua County (N. Y.) Medical Association.—A meeting of the members of the Fourth District Branch of the New York State Medical Association was held at Jamestown, February 13, and the Chautauqua County Association was organized. The following officers were elected: Dr. Thomas D. Strong, Westfield, president; Drs. William M. Bemus, Jamestown, and A. C. Shaw, Cassadaga, vice-presidents, and Dr. Henry A. Eastman, Jamestown, secretary and treasurer.

Johns Hopkins Historical Club.—At the meeting of the Johns Hopkins Hospital Historical Club, February 11, Dr. Tinker read a paper entitled "The First Nephrectomy and First Cholecystotomy." Both were performed by Americans from the West, the first by Dr. E. B. Wollcott, of Milwaukee, June 4, 1861. It was reported in the *Philadelphia Medical and Surgical Reporter*, Vol. 7, 1861-2. The second operation was performed June 15, 1867, by Dr. J. S. Bobbs, of Indianapolis, and was reported in the Indiana Medical Society Transactions, 1868. The patient was still living in 1899.

International Institute of Psychology.—The Institute has its headquarters in Paris and formally commenced its labors January 30. The committee of organization includes F. W. H. Myers, for England; Morton Prince, for America; Lombroso, for Italy; Mendeleeff and others, for Russia; Flournoy, for Switzerland, and Schrenk-Noetzing, for Germany. The lectures will be held at 5 p.m., and some of the most prominent psychologists and physiologists of Europe are on the list of speakers. Among the subjects announced are "Application of Psychology to Medicine"; "Relations Between Experimental and Introspective Psychology"; "Practical Applications of Hypnotism and Moralizing Suggestion", and "Conductibility of Psychic Force."

Will County (Ill.) Medical Society.—This Society held its regular meeting at Joliet, February 15.—The special business of the session was the discussion of certain bills now before the legislature, which especially interest the medical profession, and regarding which the Illinois State Medical Society, through its judiciary council had asked an expression of opinion. First among these was the isolation of tubercular convicts. The idea of this bill is to do away with the custom which has prevailed in the penal institutions of the state, where tubercular convicts mingle in the hospital and workrooms with the other convicts both sick and well. It is proposed to provide a room or ward in the hospital, and where this is not possible, to provide a separate building where tubercular convicts can be isolated, with the hope of preventing the spread of tuberculosis and diminishing the death-rate of the convicts from this disease. It was the opinion of the society that this bill should pass. The establishment of a state sanitarium for the tubercular was next considered. From information at hand the society was unable to determine whether it was the intention to provide a state institution for the care of the indigent tubercular to be cared for at the expense of the state, or whether the institution was to receive all cases of tuberculosis. In either event, the society considered that the establishment of such an institution would be a step in the right direction. The society unanimously approved the bill providing for the establishment of a colony of epileptics similar to the Craig Colony of New York State, and that making boards of county commissioners in counties not organized on the township basis boards of health, and inasmuch as every county should have a board of health empowered to discharge the duties pertaining to such. Pending definite information regarding the proposed bill amending the medical practice act, so as to give the State Board of Health power to revoke diplomas issued prior to 1899 "for causes," the society instructed the secretary to ask for more details regarding the matter. The Society voted unanimously in favor of the bill amending the medical practice act so as to eliminate the "Christian Scientists."

ASSOCIATED HEALTH AUTHORITIES AND SANITARIANS OF PENNSYLVANIA.

Eighth Annual Meeting, Held at Harrisburg, February 6.

About seventy-five delegates were present, representing nearly every part of the state.

Report of Legislative Committee.

The committee presented several bills which it desired the legislature to enact, for the increase of the annual appropriation to the State Board of Health, to enable it to carry into effect the registration of the vital statistics of the state, to prevent the pollution of the streams which provide water-supply for domestic use, to provide for a sanitary survey of the waters of the state, to make mandatory the law already enacted giving power to school boards to act as health boards, to make the wardens who now act to prevent destruction of the forests act as health wardens and to give the secretary of the state board an increase of salary commensurate with the work he is now doing. It was seemed advisable to urge for a sanitary survey of the waters as an entering wedge toward providing for greater powers to enable the domestic water-supply to be placed under the guardianship of the state board, and thus prevent the present fearful pollution which obtains almost everywhere in the state.

The discussion which followed the reading of these bills showed an almost unanimous belief in the great need of such action, while there was expressed a fear that the passage of these was almost impossible, as the tanneries, saw-mills, etc., are united in opposing them as interfering with their rights to use the waters everywhere as common sewers. It was suggested that the health inspectors in each county could be better used than appointing new officers called health wardens.

Diphtheria Antitoxin and Quarantine.

Dr. E. G. Matson, bacteriologist of the Bureau of Health of Pittsburg, read a paper on the immunizing value of diphtheria antitoxin and the responsibility of municipal boards of health for the prevention of diphtheria. He showed how the disease had increased everywhere, and how by careful quarantine it can be controlled, demanding the report of all cases by physicians and others, and alluded to the success obtained in regard to smallpox and vaccination, but the quarantine and thorough reporting demanded. Diphtheria is more difficult to recognize, requiring a bacteriologic examination to prove its presence and so often regarded as an ordinary sore throat, till too late to prevent its spread. Quarantine, always difficult, is doubly so and in many cases too late to aid in its control.

A thorough discussion followed this paper and showed quite a difference of opinion as to the value of diphtheria antitoxin, as well as the benefit of quarantine. The long continuance of the bacilli in the throat after all severe symptoms have passed, causes great trouble as to the continuance of the quarantine, and demands the utmost vigilance and repeated bacteriologic examinations. Formaldehyde was extolled as of great value, and several health officers said they had positively prevented any recurrence of the disease by its use.

During the discussion, a prominent manufacturer of diphtheria antitoxin startled the assemblage by announcing his want of confidence in antitoxin in the disease. He had lost 90 per cent. of cases in spite of its free employment. In rebuttal one physician stated that he had a success of 100 per cent. where he used this agent. It appeared that many physicians reported all sore throats as diphtheria, while many others failed to report because they regarded the cases as only those of sore throat. For a few minutes the discussion was quite animated, with the result of making many doubtful what they ought to believe.

[It must be remembered that the Association is composed of delegates from the local boards of health, and in many instances these are not medical men, nor in any way posted in the science of medicine. They are appointed by the councils of the boroughs or township, often for their activity as political workers, in fact one board was removed for too great activity as sanitarians, because it offended a prominent local politician by compelling him by law to remove a nuisance after he had refused to obey an order for its removal.—Ed.]

Porto Rico Conditions.

Surgeon G. G. Groff, late brigade surgeon, U. S. A., at Porto Rico, and president of the Superior Board of Health of that island, corrected many false views as to the place, described at length the diseases which prevail, the absence of smallpox—formerly very prevalent, now stamped out by thorough vaccination, about 800,0000 people having been vaccinated —the almost equal removal of yellow fever by the sanitation carried forward in every part. He showed how the poor live in almost complete want of proper and sufficient food, or housing, the want of energy on the part of the people under the reign of the Spaniards, and the present rapid improvement under the work of the military authorities of the United States. There is the chief board, or Superior Board of Health, to which the local boards in each of the more than eight hundred municipalities report. He spoke of the almost total absence of typhoid fever, scarlet fever, etc., and the prevalence of anemia due to the condition of the people as a whole. He showed the effects of the late tornado, which devastated the whole island, and how many still live among the ruins of their houses waiting till they can be given aid to rebuild. The lecture was illustrated by views thrown on a screen.

Mine Sanitation.

In a paper on this subject a mine foreman showed the want of care in the removal of smoke and powder smoke from the passages, etc., the need of men working with their feet constantly wet and water dripping on them from above, and stated that the principal disease was miners' asthma, incurable and very distressing, remaining after many years removal of the patient from mine work.

Mr. John S. Fulton, president of the State Board of Health, said he had been engaged for many years among miners, and never found them specially unhealthy; they live to old age, many very comfortable, in short, he regarded the paper as all wrong, and objected to its being published with the proceedings in the journal, *Public Health*.

Pollution of Streams.

The Legislative Committee presented certain supplementary reports on changes in the acts presented above, and this brought up the pollution of waters by the refuse of tanneries. Hair from hides has been found in Clarion, sixty miles below the tanneries, in the pipes supplying water to that city. As many hides come from abroad, and are notoriously infected with disease, the danger to the users of this water is great. A number of members demanded the passage of acts to protect the domestic waters of the state. The contamination of ice was introduced, and the question asked as to the effect of freezing in expelling germs of disease from water. On this head many held peculiar views, in that they insisted that all germs were thus destroyed or rendered harmless. The bacteriologists present, however, insisted that germs are constantly found in ice, hence ice made from polluted water is dangerous.

Officers for 1901.

The officers elected for the ensuing year are: Crosby Gray, Pittsburg, first vice-president; Dr. H. H. Whitcomb, Norristown, second vice-president; Dr. E. S. Wagner, Mechanicsburg, third vice-president; Jesse C. Green, D.D.S., West Chester, treasurer; Dr. Wm. B. Atkinson, Philadelphia, secretary.

CHICAGO PATHOLOGICAL SOCIETY.

Meeting held February 11.

Dr. L. Hektoen, president.

Osseous Stylohyoid Arch.

Dr. Thomas R. Crowder described three cases of osseous stylohyoid arch. The stylohyoid arch is a constant structure in the higher vertebrates. In many, as the horse, cow and sheep, it is completely bony; in man it is largely ligamentous. Developmental defects with more or less ossification are not infrequently found, but complete bony arch is rare. The three cases presented were not recognized before death. The anomaly is to be looked upon as a developmental defect and not as an ossification of the stylohyoid ligament once developed in the normal way. It has no clinical significance beyond the possibility of fracture——an unlikely accident.

Blastomycetic Dermatitis.

Dr. F. G. Harris reported a case of blastomycetic dermatitis in a woman 78 years old. The growth was located on the gluteal region and commenced four years ago, as a pimple which became a roughened area of intense itching and later became apparently denuded. The growth was 11 cm. long by about 6 cm. wide, having an elevated border bearing flattened papillomatous outgrowths which overhung the floor, the latter being covered with villus-like epithelial projections interspersed with areas of ulceration. The entire growth was movable on the underlying tissues; there were no secondary growths on any part of the body, nor was there any evidence of syphilitic infection. Microscopic examination showed a hyperplasia of the rete mucosum which grew down into the corium in branching, coral-like projections. In these epithelial down-growths were miliary abscesses containing the blastomycetic organisms which were present in groups of three or more. Many of them were in the process of budding. There were no cultures made from this case, on account of the diagnosis not having been made clinically.

Dr. D. Lieberthal referred to a case recently observed, in which a provisional diagnosis of syphilis was made, where the blastomyces were found in sections. He still held to his original diagnosis.

Dr. H. T. Rickets said that the histology of blastomycetic dermatitis is a specific one and entirely different from that of tuberculosis and syphilis.

Dr. H. G. Anthony spoke of the points of difference between blastomycetic dermatitis and the syphilitic and tubercular lesions resembling it.

Dr. L. Loeb called attention to the fact that blastomycetic dermatitis had not been produced experimentally.

Dr. W. E. Coates compared blastomycetic dermatitis to certain diseases in plants. He considers the organisms observed in the skin lesions as spores of fungi.

Dr. F. G. Harris stated that his case was treated with iodids for three weeks, without any improvement.

Secondary Carcinoma of Lungs

Dr. E. R. Le Count demonstrated a diffuse secondary carcinoma confined to the lymph channels of both lungs of a man who died from carcinoma of the stomach, while in the service of Dr. Kramps, at the St. Elizabeth Hospital; the condition was correctly diagnosed during life. At the necropsy, the usual large metastatic tumor nodules were found in the liver, together with an extensive involvement of the peripancreatic, retroperitoneal, peribronchial and peritracheal lymph glands; the adrenals were the seat of a very extensive carcinomatous growth; there were small tumors in the outer parts of both kidneys. The primary tumor from which all these metastatic growths arose was located near the pyloras and showed no features other than are often observed in gastric carcinomata. The lungs were alike in appearance: both possessed very extensive subpleural, linear branching and tortuous carcinomatous growths in the lymph channels, as well as tumor masses in the lymph channels of the deeper parts of the lungs. There were no nodular growths in the lungs, as are observed in consequence of the embolism of tumor cells. The lungs were fresh, no microscopic examination having been made, but the gross appearance supported, in all its details, the opinion that a retrograde lymphatic metastasis had occurred in these channels from the lymph glands at the roots of the lungs.

Toxic Effects of Formaldehyde.

Dr. Martin H. Fischer reported the results obtained from a study of the toxic effects of formaldehyde and its aqueous solution, formalin. The inhalation of formaldehyde is accompanied by marked inflammatory changes throughout the respiratory system. Dyspnea, depression of temperature, tachycardia, weak pulse, and vomiting follow the introduction of formalin into the stomach. Sudden death may result. The severity of the symptoms and the degree of histologic disturbance bear no relation to the strength or quantity of the injected formalin. The gastritis is characterized by intense congestion, necrosis and leucocytic infiltration. Intraperitoneal injections produce a fibrino-hemorrhagic peritonitis of varying intensity, according to the strength of the solution. The peritonitis following chronic formalin poisoning produced by injecting small amounts of dilute formalin intraperitoneally, is accompanied by great connective tissue proliferation, and a striking eosinophilia. Subcutaneous formalin injections produce marked exudation and leucocytic infiltration. The introduction of formalin into the conjunctival sac is followed by an iritis, which, when a single drop of the concentrated chemical is used, may be sufficient to permanently injure the eye.

In whatever way formalin is introduced into the body, certain systemic changes result. Degenerative changes and focal necroses are found in the liver and kidneys. The leucocytic infiltration following the introduction of formalin is characterized by the eosinophiles appearing first; these are followed by the other polynuclears; last of all appear the mononuclears. It is believed that differences in osmotic pressure are to be held accountable for the exudation. The death of the cell is accounted for in two ways: 1, by disturbances in osmotic pressure and, 2, by a deleterious chemical action—probably the reducing power of formaldehyde.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting held February 5.

President Dr. DeForrest Willard in the chair.

Incision for Mammary Carcinoma.

Dr. **William L. Rodman** read a paper entitled "The Best Incision in Operations for Mammary Cancer." In removing carcinoma the incision, whichever is used, should be of such length as to carry it well into the axilla, so that all the lymphatic glands are removed. One should guard against making transverse incisions across the lymphatic channels, since that might be a means of further infection. The fascia about the pectoral muscles should be entirely removed, if not all the pectoral muscles themselves. In the Kocher operation retractors become necessary to expose the axillary vessels. The Halsted operation is still more radical. The essential features are to make an incision so as to include all the infected skin; it should be of sufficient length to expose all the axillary vessels and glands; it should be completed in a reasonable length of time. In three cases in which the Warren operation was done it proved beneficial. Primary union occurred in all of them. This operation can be done more quickly than the Halsted operation and a better use of the arm results.

Dr. **Joseph Hearn** thought that the results had been good. Personally he had been in the habit of beginning the incision below the clavicle, exposing the blood-vessels and ligating them, thus preventing hemorrhage.

Dr. **W. J. Taylor** asked whether a straight incision gave sufficient space to view the axillary vessels.

Dr. **G. G. Davis** stated that his experience had been that it was hard to close the incision by any method employed. In the Halsted operation the cicatrization was hard to overcome. As to controlling hemorrhage, he believed it very difficult and thought a large number of forceps necessary.

Dr. **John B. Roberts** thought that the early period of time with which the speaker had been able to dismiss the cases from the hospital showed that the results had been good. He had been in the habit of beginning the incision above the clavicle so as to expose the lymphatics in the supraclavicular space, afterward making an incision down through the infra-clavicular space. In his opinion both pectoral muscles should be removed.

Dr. **W. L. Rodman**, in closing, stated that he had not tried the vertical incision in the Warren operation. He had not been in the habit of opening the supraclavicular space in this operation. He believed the records would go to show that carcinoma is more frequent in the colored than in the white race.

Abscess of Lung.

Dr. **Joseph Hearn** exhibited "A Case of Abscess of the Lung Following Gangrene in which Pneumotomy had been done." The patient was a man about 24 years of age, who had suffered from an abscess in the lung, and this had been opened; after an injection of a solution of methylene blue, this would be immediately expectorated, showing that there was a direct communication between the cavity and the trachea. A drainage-tube was inserted in the wound after the operation, and left *in situ* for a long period. The communication between the abscess cavity and the trachea still exists, as shown by the methylene blue test. The patient has greatly improved and is now on his way home. The question at present is how to best close the large opening which still remains in the right hypochondrium where the operation was done.

Dr. **W. Barton Hopkins** was under the impression that strapping the side might have a tendency to close the wound.

Thoracic Aneurysm.

Dr. **De Forrest Willard** reported "A Case of Traumatic Thoracic Aneurysm Treated by the Introduction of Wire and Electricity." The patient was a man aged 23 years, who, in August, 1900, sustained an injury from the fall of a heavy wooden box which struck him on the chest. Subsequently much distress was shown, with some hemoptysis. Six months later there was pulsation in the right chest. There was no tracheal tugging, nor suprasternal pulsation. From the clavicle to the axilla on the right side, dulness could be elicited, and on auscultation a systolic murmur could be detected, which was not transmitted to the carotids. The heart was pushed to the left and the impulse was rather forcible. The man finally began to lose flesh and strength, complained of pain and an operation was advised. The speaker had then by means of a canula introduced about twenty feet of silver wire—No. 25—into the aneurysm. On introducing the canula the blood rushed out rythmically with the heart's beat, which at first gave rise to some apprehension, but as soon as the galvanic current—40 milliamperes, increased 5 milliamperes every few minutes until 80 milliamperes had been reached continuing for one hour—had been turned on the hemorrhage at once ceased and did not recur. The patient was not under the influence of an anesthetic. At the end of two weeks the aneurysmal sac has diminished one-third in size and the patient has greatly improved.

Dr. **D. D. Stewart** had first employed this operation in 1890. As a preliminary step he always introduces a canulated needle to determine the thinnest portion of the sac wall, after which he then introduces gold or silver wire of 28 to 29 gauge. He generally inserts about fifteen feet. At present he is in favor of introducing two or three feet of wire in several different regions of the sac. What is desired is to coagulate the albumin, and to dissociate the watery elements of the blood; therefore electrolysis must necessarily occur to be of benefit. In applying the galvanic current he always begins at zero, gradually increasing every few minutes until 65 to 80 or even 100 milliamperes have been reached. He would not advocate the introduction of iron wire in these cases, since too much detritus might occur. An important feature is to make the patient understand that there is little or no danger in the operation per se. One of his cases lived for three years after the operation, then dying of some other disease.

CHICAGO ACADEMY OF MEDICINE.

Meeting held January 10.

Dr. Sydney Kuh in the chair.

Relations of Carcinoma of the Stomach to Chronic Round Ulcer of this Organ.

Dr. **Gustav Fütterer** presented a preliminary paper on this topic. His conclusions are:

1. Mechanical irritation or friction is a most important factor in the production of carcinoma.

2. Mechanical irritation or friction must be of a certain quality in order to produce carcinoma. Instances of this casuistic of carcinoma are related and the presence and location of proliferations of the mucous membrane of the stomach after the same mechanical conditions could be created as they

exist in large ulcer in man prove the importance of a certain quality of mechanical irritation.

3. Mechanical influences displace epithelial cells into the intermediary apparatus of nutrition, thus causing a practically unlimited proliferation of the displaced cells, apparent, not real inherent malignancy, metastasis and, through the overloading of the circulation with the physiologic products of the transplanted cells, different forms of cachexia.

4. It seems that—as a rule—the displacement occurs gradually while the possibility of a successful sudden displacement of normal epithelial cells can not be denied, notwithstanding the fact that all experimental research in this direction by others and also by myself have, so far, been unsuccessful.

5. Large ulcer of the stomach on section has the characteristic form of a fish-hook.

6. Carcinoma of the stomach when found with an ulcer, healed or not healed, must be considered secondary to the ulcer.

7. Carcinoma of the stomach when originating from a scar, grows from the point of the "fish-hook."

8. I have been able to create atypical growth of glands in the mucous membrane on the margin of an artificial ulcer of the stomach in a rabbit, that had all the characteristics of gastric ulcer in man and which showed the histologic changes of an adenocarcinoma, but there were no metastases, no cachexia and, therefore, real malignancy could not be proven.

9. From a number of reasons which present themselves against the theory of a parasitic cause of carcinoma, I would call attention to only one that appeals to me most forcibly: it is the non-infection of the cells and organs invaded by metastasis. If parasites were the cause of carcinoma they would infect the cells of the organs, and whose cells would participate in the growth, but they never do.

DR. LEO LOEB agreed with the conclusions of the essayist, especially as to the place where carcinoma originates. In a large number of observations made on animals, for instance, he found that the principal seat of carcinoma was in the eye. The theory of Dr. Fütterer as to the origin of carcinoma in the stomach could be just as well applied to the origin of carcinoma in the eyes of cattle.

DR. SYDNEY KUH stated that many years ago physicians were taught that one of the most, if not the most important, causes of carcinoma was a continued irritation. He had seen one case demonstrated which seemed to show unmistakably the effect of such constant irritation in producing carcinoma. It was a case of carcinoma of the perineum, and the constant irritation necessary as an etiologic factor was furnished by the patient being a circus-rider.

Therapy of Ointments.

PROF. C. S. N. HALLBERG presented a paper on this subject. He stated that the vehicles for ointments have, as a rule, been selected without any discrimination as to the therapeutic character of the vehicle per se. Many observers have shown the necessity for distinction in the choice of various fats, oils and waxes, both of animal, vegetable and mineral derivation, which are employed as the "basis," or more correctly the vehicle for ointments and allied preparations. From the researches of J. V. Shoemaker and many other observers, the ratio of absorbability of the various fats, as indicated by the general therapeutic purpose of the different ointments, may be classified as follows:

1. *Epidermatic:* Protective, emollient, antiseptic, counterirritant, germicide and parasiticide ointments require a non-absorbable vehicle, viz., petrolatum.

2. *Endermatic:* Cooling, anodyne, alterative, local-irritant, resolvent, sedative and stimulant ointments require absorbable fats, such as lard, suet, fixed oils and waxes of animal and vegetable origin. These become quickly rancid unless carefully prepared and preserved, and some of them are being discarded for mixtures less liable to decomposition and change, such as cacao-oil and wool-fat (lanolin). The oleates are also useful.

3. *Diadermatic:* Constitutional or systemic, directly absorbable. For ointments applied by inunction of mercury, iodin, iodids, etc., the vehicle is hydrated wool-fat (Adeps lanæ hydrosus, U. S. P.) or lanolin.

Between these generalizations there may be many modifications, such as wool-fat and petrolatum mixtures as substitutes for lard, owing to their immunity from rancidity.

In dermatology, ointments of the two first classes would alone be indicated, the purified petrolatums of different melting points affording a range of consistencies for the various epidermatic uses of ointments. Pure and carefully rendered leaf-lard and mutton suet, benzoinated according to the official process, furnish excellent vehicles for the endermatic effects, but they are prone to rancidity and reaction with mercurials and other agents required for incorporation. According to Shoemaker, the oleates penetrate into but not through the skin, and they are therefore well adapted for endermatic use. This includes the "soluble" oleates or soaps, as well as the oleates of the metals, mercury, lead, zinc, etc., and the alkaloids, or the so-called "insoluble" soaps.

In ophthalmology the principal ointments employed are those of the mercury compounds. The yellow mercuric oxid, the most largely used, should be made with petrolatum. In order to obtain the most intimate division of the oxid it is preferably prepared by levigating the freshly precipitated yellow oxid with the soft petrolatum vehicle. Benzoated and hydrated wool-fats are also used for zinc oxid and for diluting the mercuric nitrate ointment.

For systemic effect, hydrated wool-fat is the most effective vehicle, the rapidity of its absorption having been demonstrated by the presence in the urine in a short time of mercury, iodin, quinin and similar agents, after inunction with ointments prepared with this vehicle. The oleates and soaps, not passing through the skin, should not be employed for diadermatic or systemic effect.

DR. JACOB FRANK read a paper on Ureteral Implantation, which will appear in THE JOURNAL.

OMAHA MEDICAL SOCIETY.

Meeting held in Omaha, Neb., February 12.

Puerperal Sepsis.

DR. C. C. ALLISON, in a paper on this topic, pointed out that puerperal fever follows an infection of some part of the parturient canal. The determining conditions are intrinsic and extrinsic. The most important intrinsic factors are: 1. The rich supply of lymphatics surrounding the vagina and uterus: their anatomic relations as they leave the pelvic floor or uterus to reach the lumbar glands. 2. The relations of the reflected peritoneum to the pelvic organs. 3. The presence of the thick bed of subperitoneal areolar tissue which increases the mobility of this serous membrane and is a dead space encouraging free exudation. 4. As a conservative feature, the pelvic peritoneum is less susceptible to mycotic influences because of the comparative absence of stomata vera upon its surface. The most important extrinsic factors are: 1. The extensive wound, the parturient canal, which affords numerous atria from which an infective lymphangitis may develop. 2. The presence of decomposing material upon this surface. 3. Microbic development of different degrees of infectivity.

We have a vulnerable condition of the patient, and the presence of a surgical wound bathed in effete material leading often to a blood clot deeply situated. We are unable to apply a modern surgical dressing. Clinically, the types of sepsis are sapremic, septicemic, or pyemic. Sapremic symptoms are due to absorption of blood clots, lochia, residual membranes or of toxins, due to surface suppuration or to inflammation of the vagina or of the endometrium. In the latter form, we meet with infective thrombosis of the vessels followed by extensive gangrene involving the entire uterus. The sapremic symptoms are early pyrexia, full pulse, free, offensive lochia, a small amount of pain followed by free perspiration and, in favorable cases, a crisis. In unfavorable cases, superficial suppuration is present, the general symptoms are more severe, the temperature and pulse are farther from the normal, local tenderness is greater and the secretions are more impaired. This is the beginning of a septic adenolymphangitis. The vessels are fed by ulcerated areas of some portion of the canal. This lymphangitis is a common attendant on peritonitis, and there is fixation of the pelvic organs due to extensive exudate. Examination shows the uterus fixed, the abdominal muscles rigid, a boggy mass in the vaginal vault, a lessened discharge, a remittent fever and well defined pelvic pain. Treatment demands the use of the douche to remove decomposed matter from the vagina or uterus and the sterilization of any local, ulcerated surface. Carbolic acid followed by alcohol is the best caustic. Retained membrane or placenta should be removed by gentle curettage. In most cases, the pelvic and lumbar glands are engorged but not actually broken down, and yet vaginal drainage behind the uterus is a most logical therapeutic aid. Uterine curettage alone is not sufficient, nor is drainage of Douglas's cul-de-sac alone; the best results are obtained from the use of the two combined. When there is active sepsis, slight jaundice, rapid pulse, variable temperature, an enlarged abdomen, a soft uterus with a greenish cervix, we may know there is a septic thrombosis and gangrene of the uterus, a condition very rare, due to the streptococcus and fatal unless the uterus is removed by vaginal section.

Puerperal septicemia shows severe shock, severe rigors and a feeble pulse. The micro-organisms pass directly into the blood, overwhelm the patient and yet cause little distress. These cases are usually fatal and too much, rather than too little, local treatment is apt to be employed.

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Meeting in Baltimore, Md., February 4.

Dr. Howard A. Kelly, president, in the chair.

Obstructive Jaundice with Xanthoma Multiplex.

Dr. William Osler exhibited a woman aged 39, who had typhoid fever with cholecystitis in 1897. She has had three attacks of biliary colic since that and a jaundice which still persists, and has had several chills. A diagnosis of gall-stone in the common duct has been made and she is to be operated on. An unusual feature in the case is a xanthoma multiplex. Numerous small patches, like pieces of chamois skin set in the skin are scattered over the hands, axilla, neck, toes, elbows, back, joints, etc., chiefly folds of skin and exposed parts. In places they form distinct tuberous elevations, in others flat patches—*x. planum*. There is one small patch on the mucous membrane of the mouth. Occasionally they completely disappear. The condition is never serious and it is hoped it will disappear after operation.

Case of Arsenical Neuritis.

Dr. Florence Sabin reported the case of a young woman who entered the hospital two months ago, after having taken ʒi of rough on rats. She remained well for two hours, then began to vomit. The stomach was washed out repeatedly and arsenical antidotes with castor-oil given. There was no further symptoms and she left the hospital five days later. On going upstairs, when she reached home, she felt a numbness in her feet. For six days she had fever with painful micturition. The numbness increased and double foot and wrist drop developed. She was unable to feed herself. There was degenerative reaction, some thickening of the skin on the soles and scaling of the palms. The slightest touch of the feet gives pain and there is also very marked tenderness of the calves and abdominal muscles, but no edema.

Dr. Osler reported a case of arsenical neuritis following the medicinal administration of the drug to the amount of ℥i and ʒii.

Dr. Hurd reported one from the ingestion of an uncertain amount of the drug taken with suicidal intent.

Case of Pemphigus Vegetans.

Dr. L. P. Hamburger exhibited a white man, a farmer, aged 52, on whom this affection began one year ago with blisters in the mouth, followed by ulcers. The pemphigus appeared in June, 1900, beginning in the groin as little pimples. He was treated with mercury and iodid without result. He has lost 75 or 80 pounds, has new lesions in the mouth, nostril and on his tongue, resembling mucous patches, also a discharge from the right ear. A syphilitic history can not be made out, but he has had malaria and there has been pulmonary tuberculosis on his mother's side. Fungating masses are seen in the axillæ and groins, and large erosions over the back. There is much salivation.

Ovarian Organotherapy.

Dr. Wilmer Krusen, of Philadelphia, read a paper on the use of the ovarian extract, 5 grs. a day, in 100 cases of amenorrhea and other pelvic disorders. While he met with some striking results, on the whole, the treatment proved a failure, and no definite reliance is to be placed on the agent. No benefit was seen in amenorrhea and dysmenorrhea, but better results in the artificial menopause. It was, however, harmless. The use of the agent is based on a false theory since the ovary is not a secreting organ.

Frequency of Typhoid Bacilli in the Blood.

Dr. R. I. Cole reported results of investigations on this point. He removes 8 to 10 c.c. of blood from the arm, using forceps and not touching. Cultures were made in 15 cases, eleven of which were positive, and in six of the eleven the bacilli were isolated before the Widal reaction was positive. The bacilli were found much more frequently, and for a much longer time than is usually supposed. He obtained them in mild more than in severe cases. The method is valuable when the Widal is delayed. The earliest day on which he found the bacilli was the sixth.

Dr. Wm. Osler said that there are cases in which the diagnosis could not be possibly made without the blood examination.

PHILADELPHIA PEDIATRIC SOCIETY.

Meeting held February 12.

Dr. T. S. Westcott in the chair.

Jacksonian Epilepsy.

Dr. J. D. Target reported two cases of Jacksonian epilepsy. In one, the patient was 2 years and 10 months old, and had been well until three months before being seen, when it had a convulsion mostly confined to the left leg. During the past few months there has been paralysis of the left leg, which has grown much worse.

The second patient is 8 years of age, and has suffered from whooping-cough and measles. When two years old she had a "nervous" spell. Similar attacks have recurred at intervals and are growing worse. In September of last year the child was late at school one morning, and, frightened because of this, she fell in the hallway, where she was subsequently found. The left leg was paralyzed, and in this part convulsive movements set in. This attack was attended by unconsciousness. Some time later convulsive movements began to affect the right leg, and in this part convulsive movements often occurred every few minutes. The mother has observed that frequently these attacks are at once relieved by the act of micturition.

Dr. J. P. Crozer Griffith related the history of a case in which there had been symptoms of brain lesion, with peculiar movements of the limbs and face. In his opinion hysteria is often overlooked in children.

Congenital Cyanosis.

Dr. Griffith reported, among other cases, one of congenital cyanosis in a child who was 3 years of age, who had a history of having been subject to cyanosis during crying spells from the age of 3 months. The pulmonary second sound was greatly accentuated, but no murmur was heard. The exact lesion was not known, but it was suggested that there might have been an abnormal arrangement of the blood-vessels.

Gumma of Liver in Child.

Dr. D. L. Edsall reported a case of gumma of the liver occurring in a child 14 years of age. The speaker stated that gumma in late childhood has not been frequently reported. The condition has been repeatedly mistaken for leukemia or malignant growths. The father had possibly had syphilis; in the case of the mother, the history was negative. On admission to the St. Christopher's Hospital for Children, there was subcutaneous edema and effusion into the abdomen and pleuræ. On the left side of the abdomen a mass the size of the hand could be detected, and apparently was attached to the left lobe of the liver. Liver dulness extended to the navel and there was pain on pressure. Under the influence of specific treatment the mass on the left side became perceptibly diminished toward the second week, and at the end of one month had entirely disappeared. The liver, however, remained enlarged, and the renal symptoms present did not change.

Mastitis from Violence.

Dr. Emery Marvel reported a case of mastitis which had been due to infection from external violence. In this case the incision and drainage had given entire relief.

Dr. T. S. Westcott made a few remarks on the differential modification of the proteid of milk.

NEW YORK ACADEMY OF MEDICINE.

Meeting of the Section on Otology, held February 13.

Operation in Acute Mastoiditis.

Dr. E. B. Dench presented a paper on "The Early Operative Treatment of Acute Mastoid Inflammation." He said that while the presence or absence of fever is of no significance in adults as indicative of the condition of the middle ear and mastoid, it is a symptom of some value in children. The pain is usually, but not invariably, severe. Sleeplessness is one of the most important symptoms, and in any case of middle ear suppuration in which the patient is unable to sleep, whether or not this is attributed to pain, it is important to carefully investigate the condition of the mastoid. In his experience, tenderness of the tip of the mastoid has been present in almost all cases of acute middle ear inflammation occurring in the recent epidemic of grippe. Of the symptoms which warrant operative intervention, tenderness over the region of the antrum is the most reliable, but others must be present to warrant a resort to a mastoid operation. In any case, a narrowing of the deep meatus should be regarded as an exceedingly grave sign, and if it persists in conjunction with mastoid tenderness, the surgeon should not delay operating. A mastoid operation conducted in accordance with the principles of modern antiseptic surgery can hardly be said to be attended by any special risk. Sometimes a free incision into the membrana tympani at an early stage is all that will be required, but when it is evident that the mastoid is involved, the operation should be complete and thorough. The first step should be the opening of the antrum and the establishment of a free communication with the middle ear. The possibility of intracranial involvement in even the most acute cases is one argument in favor of this thorough operation being done in every instance. He would, therefore, operate on these cases very early, limiting all measures at abortive treatment to those seen in the earliest stage, and in which there is simply a fear that mastoid involvement will occur. When there is narrowing of the meatus and well marked mastoid tenderness he does not believe it is prudent to attempt to abort the inflammation; it is far better to keep the patient perfectly quiet and under observation, abstaining from using external applications, which would probably only serve to mask the symptoms. If at the end of twenty-four or forty-eight hours there is no change the surgeon should operate on the mastoid.

KINGS COUNTY (N.Y.) MEDICAL ASSOCIATION.

Memorial to Edward Robinson Squibb.*

Dr. John D. Rushmore, Brooklyn, presented this memorial: Dr. Edward R. Squibb was born in Wilmington, Del., July 4, 1819. His medical education was received in Philadelphia, at the Jefferson Medical College, and from this institution he was graduated in 1845. He began his medical career as a surgeon in the United States Navy, and those who knew him well can recall with pleasure the relation of his experiences on shipboard. To the end of his life he loved the sea, and no form of relaxation was enjoyed more by him or more beneficial to him than an ocean voyage.

In 1853 he was acting as surgeon in charge of the Naval Hospital in Brooklyn. He had at that time reached in line of promotion the position of past assistant surgeon in the U. S. navy. About 1863 he resigned from the navy, and failing to receive from the government sufficient funds to carry on the investigation and work necessary for the manufacture of pharmaceutical preparations, of which the government was in need, he established a private laboratory, and, to quote from the *Medical News*, "began what has been one of the most valuable life works that this country has known in the history of medicine, for it was medicine itself of which he was master. A chemist and a physician he was, but with all the keen desire of the true scientist to discover remedies and of the doctor to apply them to human ill. Instead of practicing at the bedside with the drugs the names of which he had learned in his medical books, he studied the drugs themselves chemically, physiologically, therapeutically, and sent them out to his brother practitioners in such form that the whole country, in fact the profession of the round world, accepted his dictum, and made his name the standard mark for purity and accuracy in pharmaceutical preparations."

It is fitting that the Kings County Medical Association should do all honor to his memory. He was one of its founders and in defense of the principles on which it is based he took a leading part nearly twenty years ago, when, with many others, he withdrew from the New York State Medical Society and subsequently formed the New York State Medical Association, of which this body is an integral part. He was a man of strong convictions, but no better evidence of his freedom from any strain of intolerance or prejudice can be furnished than his modest and temperate but firm defense of what at that time he thought was right; and his quiet accuracy of statement then, as always, was as far as possible from the blustering confidence that characterizes the support of a prejudice. The position which he took and maintained so sturdily alienated no man's affectionate regard for him, and some of those who differed from him then, bore willing testimony to his worth by their presence at the funeral service which, in its simplicity, accorded with his own wish. He was a member of The American Medical Association, New York State Medical Association, Kings County Medical Association, Metropolitan Museum of Art, the Philosophical Society of Philadelphia, and many other societies of like character.

His death, the immediate cause of which was cardiac dyspnea, occurred on the evening of Oct. 25, 1900, at his home. The following extract from an obituary notice published in the daily press is a touching and worthy tribute to his character: "The death of this well-known maker of medicines is the removal of a sturdy character, a fine thinker, an eminent chemist, and a strong, clear personality. Science, philanthropy, religion and citizenship have lost a bulwark and an ornament in him."

He was a great power in Brooklyn—out of sight. He never advertized. He never made addresses. He wrote only within the lines on the subjects and for the members of his own profession. He abhorred publicity and praise. Yet his influence on medicine, on medical thought, on medical practitioners and sympathetically on public health was not unlike that of the Gulf Stream on climate or of the Nile on soil. Men and women lived and labored, died and won renown here who never knew of him. But those who knew Brooklyn to its elements, to its foundations, who knew medicine to its causes and beginning, knew that this quiet, true, diligent man, this incarnated conscience and this great embodied capacity was veritably a genius, truly a world benefactor, one whom the giants and the literature of medicine round the earth held in almost worshipful veneration.

He was a martyr as well as a marvel of science. Over a generation ago, his devotion to his calling subjected him to injuries from an explosion, by which his life was long in danger, his sight long threatened and his visage permanently and sadly marred. The latter misfortune was the only one that did not pass away. He bore it with dignity, philosophy and fortitude. It increased his congenital aversion to public occasions, but it, by reflex action, sweetened to him the society of friends and the comforts of literature and thought. It in nothing affected, except to confirm and augment, his faith in the Divine Goodness, giving as it did, to him, a cross to bear, which he bore in the spirit and love of the Master. To those aware of the causes and of the ordeal, this affliction made his career replete with the power of pathos and eloquent with the pathos of power.

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* Published by special request of the Kings County (N. Y.) Medical Association.

Long ago a wave of adversity rolled over and prostrated this extraordinary man. His medical brethren quietly put him on his feet with a love gift that enabled him to start the world again. His rehabilitation was essential to their sense of security in their own work. Their gift to him was a debt, they felt, not a gift, and not a loan. Not so felt he. As soon as he could, he returned it all with interest to the full. He would owe no man anything, even by implication. His exquisite act of honor has been within the knowledge of the descendants of those whom it was tendered for over a generation. It is permitted to tell it now that he is dead. Said Goethe: "The spirit in which we work is the chief matter." The spirit in which E. R. Squibb worked was worthy of the best ideals of duty and consecration to humanity.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Blepharitis.

Pyle, as noted in the *Phila. Med. Jour.*, states that two much attention can not be given to the causal conditions; careful attention to refraction, and any disturbance of the oculomotor apparatus should be remedied. If chronic conjunctivitis co-exists, which is the rule, a mild stimulating astringent should be used. He recommends the following:

℞.	Acidi borici	gr. xlv	2	66
	Sodii chloridi	gr. x		66
	Zinci chloridi	gr. ii		12
	Aq. destil	℥iv	128	

M. Sig.: A few drops to be instilled into each eye three times a day.

He states that all scales and crusts should be carefully removed, morning and night. Absorbent cotton moistened with warm water, warm boric-acid solution or warm bichlorid of mercury solution—1 to 5000—may be used to loosen the accumulated secretions. Any underlying ulcers should be cleansed, the cilia epilated, and the cavities painted with a 2 per cent. solution of silver nitrate. The application of a fatty substance facilitates removal of crusts, softens the skin and prevents further occlusion of the glands. For this purpose he advises the following:

℞.	Hydrargyri oxidi flavi	gr. i		06
	Vaselini	gr. iii		18

M. Sig.: Rub in thoroughly a piece the size of a matchhead each morning and night, after having removed the crusts, dried secretions, etc.

Prevention of Gastric Fermentation.

Ewald recommends the following:

℞.	Resorcin—resublimed	gr. lxxv	5	
	Bismuthi salicylatis			
	Pulv. rhei rad.			
	Sodii sulphatis, āā	ʒiiss	10	
	Sacchari lactis	ʒiv	16	

M. Sig.: One-half teaspoonful twice daily.

Ointment for Chapped Hands.

℞.	Hydrarg. oxidi flavi	gr. ii		12
	Balsami Peruvianæ	gr. x		66
	Vaselini	℥ss	16	

M. Sig.: Apply locally night and morning. If there is itching present two grains of carbolic acid may be added.—Hearn.

For Constipation with Flatulence.

Illoway, in *New Orleans Med. and Surgical Jour.*, recommends the following combination:

℞.	Ext. Colocynth. comp.	gr. 1/3		02
	Terebinthinæ—Venice	gr. i		06
	Pulveris aloes Soc.	gr. iss		09
	Ext. nucis vomicæ	gr. 1/4		015
	Ext. hyoscyami	gr. i		06

M. Ft. pil. No. i. Sig.: One such pill twice daily.

Treatment of Acute Gonorrhea.

Dr. Cabot, in *Med. News,* states that if cases come to him for treatment during the first twenty-four hours, they can be greatly relieved, and the gonococci made to disappear from the discharge in the course of a few days. The following silver salt is used:

R.	Argonin	gr. lxxx-ʒiiss	5-10	
	Aq. destil. q. s. ad	℥iv	128	

M. Sig.: Use as a deep injection into the urethra.

Six drams of the solution should be employed and retained within the urethra, first instructing the patient to urinate and wash the urethra out with a warm solution. Other treatment consists in the use of the following internally:

℞.	Potassii citratis	ʒvi	24	
	Aq. destil. q. s. ad	℥iii	96	

M. Sig.: One teaspoonful in water three times a day.

Where the case presents a copious discharge the following is given:

℞.	Plumbi acetatis			
	Acidi tannici			
	Zinci sulphatis			
	Cupri sulphatis, āā	gr. ii		12

M. Ft. tabella No. i. Sig.: Dissolve one such tablet in four ounces of water and use as an injection after each urination. The importance of the temperature of the injection is emphasized, and he recommends the injection to be given at a temperature of 110 F.

Treatment of Pulmonary Tuberculosis.

The following prescriptions are very adaptable in treatment of pulmonary tuberculosis:

FOR THE SEVERE COUGH.

℞.	Codeinæ	gr. iii		18
	Dionin	gr. vi		36
	Acidi hydrocyanici dil	ʒi	4	
	Spts. vini Gallici	℥i	32	
	Ext. glycyrrhizæ	ʒi	4	
	Syr. pruni Virginianæ q. s. ad	℥iii	96	

M. Sig.: Shake well and take a teaspoonful three or four times a day.

Dionin is a preparation derived from morphin. It is a white crystalline powder, soluble in water and can be used subcutaneously. It contains some of the narcotic principles of morphin, but not to such a degree. It is recommended in same doses as codein and can be used in tuberculosis and bronchial affections.

FOR THE SYSTEMIC TREATMENT.

R.	Creosoti—beechwood	ʒii	8	
	Glycerini	℥i	32	
	Spts. vini Gallici	ʒvi	24	
	Tinct. gentianæ			
	Tinct. cinchonæ comp. āā	℥iii	96	

M. Sig. One teaspoonful four times a day.

W. J. Robinson recommends that each time the mixture is repeated one dram of creosote be added until one ounce is added. The patient thus commences with two minims of creosote per dose and reaches eight minims.

℞.	Creosoti	ʒi	4	
	Guaiacol	ʒii	8	
	Emul. ol. morrhuæ—50 per cent.	℥xii	384	
	Syr. hypophosphiti—U. S. P.	℥iv	128	

M. Sig.: One tablespoonful three times a day.—*Merck's Archives.*

Treatment of Acute Bronchopneumonia in Childhood.

The Medical Record gives the following outline of treatment by Carriere: Isolate the patient as much as possible, avoid chills, and make the air which the patient breathes aseptic by antiseptic vapors. For this purpose he recommends the following:

℞.	Phenol	ʒv	20	
	Thymol			
	Benzoin, āā	ʒiiss	10	
	Alcoholis	℥iii	96	
	Aquæ	Oiss	768	

He also recommends keeping the respiratory tract in good condition by nasal douches and mouth washes of boric acid, keeping the skin in good condition, keeping the gastrointestinal tract in order by the administration of mild chlorid of mercury. As alimentation he recommends a glass of milk every two hours; bouillon or beef juice to children over eighteen months.

Rhus Glabra in Enuresis.

Dr. J. J. Cassidy states, in the *Canadian Jour. of Med.*, that rhus glabra will prevent incontinence of urine in children. He prescribes it in the following form:

℞.	Ext. *rhois glabræ flu*	ʒvi	24	
	Syrupi simplicis q. s. ad	℥ii	64	

M. Sig. One teaspoonful at bedtime. He states that the use of iron as an adjuvant to rhus is important; but the mineral being incompatible with this vegetable astringent he gives it in a separate mixture along with cascara to relieve constipation, and lactophosphate of calcium to relieve irritative dyspepsia. He recommended the following:

℞.	Ferri citratis	ʒiiss	10	
	Syr. calcii lactophosphatis			
	Elix. cascaræ sagradæ—arom.—āā	℥ii	64	

M. Sig.: One teaspoonful after the noon meal.

The action of rhus glabra resembles tannic acid. The astringent action of the former is exercised upon the bladder.

To Check Hemoptysis.

A. Hecht has employed with success the following pill. in checking hemoptysis in tuberculosis:

℞.	Extracti ergotæ	gr. xxx	2	
	Pulv. digitalis fol.			
	Ext. hyoscyami, āā	gr. xx	1	30
	Quininæ sulphatis	gr. xxx	2	

M. Ft. pil. No. xx. Sig.: Three to five pills may be taken daily. He believes that the real virtue of this combination in producing hemostasis lies in the quinin reinforced by the digitalis.

Lime Burns of the Eye.

W. C. Posey, in the *Ther. Gazette*, states that after removal of all the irritating substance. the lids should be everted and every part of the conjunctiva carefully cleansed with oil or a diluted solution of vinegar. or water alone may be employed. Sugar is sometimes used in concentrated solutions. as cane sugar forms an insoluble compound with lime. Following the chemical neutralization the eye should be thoroughly cleansed with a boric-acid solution, 10 grains to the ounce, and ice compresses constantly applied until all inflammatory reaction has subsided. As there is danger of involvement of the iris, if the cornea is affected a solution of atropin should be dropped into the eye to dilate the pupil, and subsequently the use of olive-oil or castor-oil dropped into the eye will best promote the healing.

Treatment of Chalazion (Stye).

Stazmenski states that the cause of the affection consists in the penetration of microbes into the meibomian gland. The treatment he employs consists in applying the following ointment upon the skin surface of the chalazion and gently rubbing it in every night at bedtime:

℞.	Iodi (pure)	gr. xii		72
	Potassii iodidi	gr. xxxvi	2	36
	Vaselini	ʒi	4	
	Aq. destil.	ʒi	4	
	Lanolini	℥ss	16	

M. Sig.: For local application.

Treatment of Influenza.

W. H. Thompson, in the *Med. Record*, advocates the use of the following pill:

℞.	Ext. aconiti	gr. 1/12		005
	Pulveris opii et ipecac	gr. ss		03
	Phenacetini	gr. ii		12
	Quininæ sulphatis	gr. iss		09

M. Sig: Two such pills to be taken three times a day as long as the fever continues. The dosage is then to be reduced to one pill until the catarrhal symptoms have passed away.

For the coryza and nasal symptoms he recommends the following:

℞.	Ext. belladonnæ	gr. 1/4		015
	Camphoræ	gr. ii		12

M. Sig.: One such pill as necessary.

FOR THE PERSISTENT COUGH.

℞.	Ammonii bromidi	gr. xx	1	33
	Antipyrini	gr. x		66

M. Ft. Chartula. Sig.: One powder once or twice daily.

Phosphate of Calcium in Scrofulosis.

Hare recommends calcium phosphate in suppurating scrofulous ulcers. Owing to its more ready solubility, he prescribes the lactophosphate of calcium in the following combination:

℞.	Syrupi ferri iodidi	ʒi	4	
	Olei morrhuæ	℥i	32	
	Syr. calcii lactophos.	℥i	32	
	Aquæ calcis q. s. ad	℥iv	128	

M. Sig.: Shake well and take from two to three teaspoonfuls after each meal.

Medicolegal.

Five Dollars for Postmortem Examination.—Section 4936 of the Alabama Code provides that a physician or surgeon, who has been subpenaed to attend an inquest, shall be allowed, as a witness, $5, with $1 additional for each mile he may have traveled in attending such inquest, to be collected out of the estate of the deceased, if solvent, and if insolvent, to be paid out of the county treasury. Section 4573 provides that, if the immediate cause of death is uncertain, a physician or surgeon may be summoned to make a postmortem examination, who shall give his opinion in writing as to the cause of death, and shall be entitled to the same fee and mileage, to be paid in the same manner, as for attending an inquest, etc. Each of these sections, the Supreme Court of Alabama says. in the case of Naftel vs. Montgomery County, relate to the same subject-matter, and are to be construed together. But one fee is allowed the physician or surgeon for attending an inquest and giving his professional opinion after examining the dead body, however much labor or skill it may have required. and the fee, therefore, is specifically prescribed. If it be said that this allowance is inadequate, a full answer to the suggestion is that the legislature has prescribed this and no other fee for such services. It often occurs in rendering services to the state and county, that the citizen is inadequately compensated in money, notably in the cases of jurors and witnesses. whose fees, as allowed by law, in many instances, fall short of their actual expenses, to say nothing of the value of their time. their trouble. and losses in business. Their compensation comes mainly from the services they render the county in the interest of law, order and good government; and so does the physician's or surgeon's, when he bestows his skill in the duties required of him in holding inquests, in the interest of the discovery of unlawful homicides and the punishment of the perpetrators of them. In this case, the plaintiff stated at an inquest that he could not give a professional opinion as to the cause of death without holding an autopsy. Thereupon he was directed to hold the same and to make a microscopic examination of the organs of the deceased, which were reasonably necessary to be made in order to determine whether or not death resulted from foul means. Pursuant to such directions from the coroner, he performed an autopsy and made a microscopic examination of the organs of the deceased, being engaged in and about the same for one day and a part of another. The reasonable value of such services in making such autopsy and microscopic examination was fixed at $50. He was paid $5 therefor, by the administrator of the estate of the deceased, and now the Supreme Court of Alabama holds, under the doctrine above stated, that he received the fee allowed him by law, and was entitled to no more.

Could Do No Less than Resuspend Unvaccinated Pupil.—In the South Dakota case of Glover vs. the Board of Education of Lead, the suspension from school, on the 17th of the month, of a pupil who refused to furnish satisfactory evidence of vaccination, was followed by mandamus proceedings. At the hearing, it was tacitly conceded by the board that at and prior to the time the boy was suspended there was no case of smallpox in the city or county, and that its order requiring vaccination was needless, and without justification, as a sanitary or preventive measure, and was issued without cause and without authority of law, and was unjust and oppressive. Upon this admission, and with consent of the board's counsel, a peremptory writ of mandamus was issued, on the 2d of the following month, commanding the school board and superintendent to immediately admit the boy to the public school, as a pupil, without requiring of him a certificate of vaccination or compliance with the order of the board of education requiring pupils of said schools to be vaccinated. Conformable to this mandate, the boy was permitted to return to school, as a pupil, on the 5th. But, in the afternoon of that same day, he was presented with a notice from the superintendent stating that, by order of the board of education of the 3d instant, he was refused admission as a pupil of the public schools of the city until he presented satisfactory proof of his vaccination against smallpox. Thereupon contempt proceedings were begun, based upon the alleged violation of the peremptory writ of mandamus mentioned. The defense was that subsequently to the service of the writ, and before the boy had been readmitted to the public schools in compliance therewith for a day, most alarming sanitary conditions were officially brought to notice by the service of resolutions and orders of the state, county and city boards of health, respectively, showing that smallpox was then prevalent in the vicinity of the city, and requiring the health authorities to exclude all children and pupils from the public schools who failed or refused to furnish satisfactory evidence of vaccination. Under these circumstances, the Supreme Court of South Dakota holds that there was no contempt. In view of the action taken by the various boards of health, no less, it says could be done, and the penalty of the law be escaped. While the earlier resolution was in effect nullified by the mandamus complied with, further proceedings on the part of the board of education, under justifiable conditions, were not forestalled for all time, and the fact that an emergency immediately arose requiring prompt action for the protection of the public from the consequences of a dreadable disease in no manner rendered the board guilty of contempt. The temporary regulation, requiring children to furnish satisfactory evidence of vaccination or remain away from school until the further order of the board, was reasonable, and within the general power of the school board to control, manage and regulate the public schools of the city. Independently of express legislation, a board of education has power, under circumstances like these, to close the schools until the danger subsides, or suspend such as refuse to undergo vaccination.

Concerning the Pennsylvania Medical Practice Act.—The Pennsylvania act of May 18, 1893, the Supreme Court of that state holds, *in re* Campbell, is a valid and constitutional exercise of the police power of the state upon a subject plainly within that power, and urgently in need of control by it. The title of sixty-two words it is certain is not open to criticism for brevity or vagueness. But it says that the purpose of the act is indicated in the phrase "to regulate the practice of medicine and surgery." This gives notice to any one desiring to enter the practice that its provisions do or may concern him. Nothing more is required. Nor does the court consider that the act is in contravention of the provisions of the state constitution vesting the appointing power in the governor, because, it holds, there is nothing in the constitution which prohibits the legislature, in creating an office, from fixing the qualifications of the incumbent and thereby limiting the choice of the governor in the appointment to the class of persons so qualified, which is all this act does in regard to the offices which it provides for. Neither does it think that the act violates the constitutional prohibition against any local or special law "granting to any corporation, association, or individual any special or exclusive privilege or immunity." It says the act is not local or special. It embraces the whole state, and applies to all persons of every school or system of medicine desiring to enter on the practice. The designation of the three medical societies from whose members the board of examiners are to be selected is not the grant of any special or exclusive privilege to those societies, but a convenient method or securing a competent and qualified class from whom the examiners may be selected. But, even if it should be regarded as a special privilege to those societies, it would not be unconstitutional. The board of examiners are state officers, charged with the administration of the state's police power on the subject of admission to the practice of medicine. The constitutional provision quoted does not apply to such officers. The state may choose its own agents in its own way to carry out its commands in regard to the taxing or police or other general powers. The act, the court further holds, by clear implication provides for registration by entry of record in a county medical register kept by the prothonotary. This register, while not a judicial record, is a public record of matters of public interest and concern, directed to be kept open and accessible for the information of the public, put from motives of public policy under the sanction and control of the court, the duty of so keeping it being imposed on the prothonotary as an officer of the court, in the performance of which duty he is necessarily subject to the orders and control of the court. So, if a licensed physician applying for registration should be refused without good reason, the court, on mandamus or by summary order, would compel its officer to perform the duty laid upon him by the statute: and if he has, through misinformation, made an erroneous entry not warranted by law, the court has power to compel its amendment or cancellation. It is immaterial that he who petitions to have the record corrected should have no personal interest in the matter. It is also irrelevant to a proceeding to have a medical register corrected by striking off a name that on a trial for practicing medicine in violation of the statute the person whose right to registration is questioned was acquitted, it being charged that the entry was procured by falsehood and fraud.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical News (N. Y.) February 16.

1 *A Hair-Cast of the Stomach: Its Successful Removal by Laparotomy. Nathan Jacobson.
2 *Scurvy and Rickets in Young Children. H. A. Hare.
3 *The Relation of Tuberculosis to the Tenement-House Problem. Arthur R. Guerard.
4 *Treatment of Lupus. H. Rockwell Varney.
5 A Report of Some Cases of Abdominal Surgery, With Remarks on the Diagnosis of Carcinoma of the Cecum and the Surgical Treatment of Carcinoma of the Liver and the Gall-Bladder. (Continued.) Charles G. Cumston.
6 Pregnancy and Typhoid. G. H. B. Terry.
7 Foreign Body in the Urethra. H. W. Clouchek.

Boston Medical and Surgical Journal, February 14.

8 A Case of Cesarean Section for Complete Placenta Previa. C. H. Hare.
9 *The Woolen Yarn Truss in Infantile Inguinal Hernia. E. S. Boland.
10 *Disinfection Within or Without the Body in Diphtheria. M. A. Veeder.
11 A Case of Idiopathic Dilatation of the Colon. Maurice H. Richardson.
12 Placenta Previa Centralis: Report of a Case. John W. Dewis.
13 A Case of Complete Placenta Previa. Frederick Coggeshall.

Philadelphia Medical Journal, February 16.

14 Perforating Ulcer of the Stomach; Operation; Recovery. John H. Musser and Henry R. Wharton.

15 *Recent Progress in the Treatment of Acute Lobar Pneumonia. James K. Crook.
16 *Periodical Insanity. A. R. Defendorf.
17 Medical Examination of School Children. Edward M. Greene.
18 *Tetanus Following Clean Operation Wounds. Joseph B. Bissell.
19 *Adhesion of the Soft Palate to the Posterior Wall of the Pharynx. Augustus Koenig.
20 *Treatment of Erysipelas. N. G. Keirle, Jr.

New York Medical Journal, February 16.

21 *Stethophonometry. Albert Abrams.
22 Septicemia in Young Chickens. Leo F. Rettger.
23 *A New Portable and Inexpensive Ophthalmometer. William F. Aiken.
24 *Combined Surgical Operations in Female Subjects at a Single Séance. R. Stansbury Sutton.
25 The Normal Declinations of the Retinal Meridians. (To be concluded.) George T. Stevens.
26 *A Study of Buboes and Their Treatment. Frederick Griffith.
27 Hysterical Anesthesia and Analgesia. B. C. Loveland.

Medical Record (N. Y.), February 16.

28 *The Problem of Appendicitis from Medical and Surgical Points of View. Robert Abbe.
29 *The Causes of Failure of Compensation in Diseases of the Heart. Morris Manges.
30 *Strabismus and Its Management. J. H. Woodward.

Cincinnati Lancet-Clinic, February 16.

31 *The Prognosis and Treatment of Lateral Curvature. Albert H. Freiberg.
32 Pruritus and Eczema of the Anus and Rectum. George J. Monroe.

St. Louis Medical Review, February 16.

33 Best Methods for the Treatment of the Insane. Edward C. Runge.
34 *Influenza, More Especially Its Effects on the Respiratory Organs and Accessory Nasal Sinuses. William Bayard Shields.

Pediatrics (N. Y.), February 1.

35 *Congenital Hypertrophic Stenosis of Pylorus, With an Account of a Case Successfully Treated by Operation. Jas. H. Nicoll.
36 Smallpox in Children. Frederick Leavitt.

Okalahoma Medical Journal (Guthrie), January.

37 Some Points in Early Diagnosis and Treatment of Locomotor Ataxia. John W. Duke.

Hot Springs (Ark.) Medical Journal, February.

38 *Medullary Narcosis. W. L. Rodman.

Cleveland Medical Gazette, February.

Symposium on Nephritis:
39 Acute Nephritis—Symptomatology Oren E. George.
40 Diagnosis. A. J. Skeel.
41 Laboratory Diagnosis of Nephritis. Martin Friedrich.
42 Prognosis. F. A. Payne.
43 Treatment. John Perrier.
44 Acute Hemorrhagic Nephritis in Children. Edward P. Carter.
45 Acute Alcohol Nephritis. H. B. Ormsby.
46 Acute Nephritis from Chemical Toxic Agents. John G. Spenzer.
47 Acute Syphilitic Nephritis With Report of Two Cases. Charles J. Aldrich.
48 Treatment of Nausea and Vomiting Following Anesthesia After Abdominal Operations. Hunter Robb.
49 The Sanitary School-Room. L. K. Baker.

American Journal of Medical Sciences (Philadelphia), February.

50 *A Clinical Study of Diphtheria. Fred Grant Burrows.
51 *Observations on the Character of the Cells in the Exudation in Acute Interstitial Nephritis, With Special Reference to the Presence of Cells With Eosinophilic Granulations. W. T. Howard, Jr.
52 *Rare Cardiac Anomalies. Ludvig Hektoen.
53 Report of a Case of Blastomycetic Dermatitis. Henry W. Stelwagon.
54 Refractory Syphilis, With Report of a Case Utterly Resistant to Specific Treatment. Jay F. Schamberg.
55 *Physiologic Dilatation and the Mitral Sphincter as Factors in Functional and Organic Disturbances of the Heart. Morton Prince.

Brooklyn Medical Journal, February.

56 Wounds of the Liver and Gall-Bladder. James P. Warbasse.
57 Inflammation of the Gall-Bladder and Bile-Ducts. H. Beeckman Delatour.
58 Cholelithiasis. Mathias Figueira.

Archives of Pediatrics (N. Y.), February.

59 *Hemorrhage Into the Suprarenal Capsule in Still-born Children and Infants: Report of a Case Showing Rupture of the Sac and Escape of Blood Into the Perirenal Tissues and Peritoneal Cavity. S. McC. Hamill.
60 *The Care of Children With Mitral Lesions. Geo. M. Swift.

Medical Council (Philadelphia), February.

61 Disorders of the Sexual Function in Man. A. H. P. Leuf.
62 The Injection Method for the Relief and Cure of Hernia. C. Fletcher Soude.
63 Catarrhal Jaundice. Charles F. Hope.
64 A Case of Gall-Stones. Ralph Browning.
65 Scarlet Fever. H. J. Richardson.
66 The Female Bladder. A. L. Russell.
67 Mustard. W. O. Bunnell.
68 Treatment of Diseases of the Nose, Throat and Ear by the Family Physician. E. B. Gleason.
69 Corns. Lester Keller.
70 *Unclean Mouths. M. H. Fletcher.

Bulletin of Johns Hopkins Hospital (Baltimore, Md.), January.

71 *The Removal of Pelvic Inflammatory Masses by the Abdomen After Bisertion of the Uterus. Howard A. Kelly.
72 *Abstract of the Bacteriology of Cystitis, Pyelitis and Pyelonephritis in Women. Thomas R. Brown.
73 *The Intrinsic Blood-Vessels of the Kidney and Their Significance in Nephrotomy. Max Brodel.
74 Notes on Aerobic Spore-Bearing Bacilli. W. W. Ford.

Medical Sentinel (Portland, Ore.), February.

75 The Treatment of Common Mind Troubles. John W. Givens.
76 Oöphorectomy and Hysterectomy for Epilepsy. Walter Lindley.

Obstetrics (N. Y.), January.

Symposium on Pregnancy:
77 *Physiology and Folklore of Pregnancy. Harriet C. B. Alexander.
78 *The Mutual Influence of Pregnancy and the Infectious and Constitutional Diseases. Robert B. Preble.
79 *Toxic Habit and Toxic Occupation Aspects. C. S. Bacon.
80 *Venereal and Dermic Aspects of Pregnancy. W. L. Baum.
81 *Renal Aspects of Pregnancy. Charles E. Paddock.
82 *Neurologic Aspects of Pregnancy. D. R. Brower.
83 *Psychiatric Aspects of Pregnancy. W. G. Stearns.
84 *Psychiatric Aspects of Pregnancy. C. A. Wood.
85 *Laryngologic Aspects of Pregnancy. Edward T. Dickerman.
86 *The Teeth of Pregnancy. E. S. Talbot.

Medical Dial (Minneapolis, Minn.), February.

87 Tuberculosis of Bones and Joints. Knut Hoegh.
88 Treatment of Bronchopneumonia. William Fitch Cheney.
89 Case of Gunshot Wound. J. H. Fonger.

Annals of Surgery (Philadelphia), February.

90 *Gunshot Wounds in the Philippino-American War. E. F. Robinson
91 *Sarcoma of the Uterus. Van Buren Knott.
92 *Contribution to the Surgery of Multilocular Renal Cyst. Carl Beck.
93 Cicatricial Stricture of Pharynx Cured by Plastic Operation. B. Farquhar Curtis.
94 *The Improved Technique in the Operative Surgery of Carcinoma of the Stomach. Willis G. Macdonald.
95 Cases of Compound Complicated Fracture Illustrating the Value of Operative Interference in the Treatment of These Injuries. Henry R. Wharton.
96 *A Method of Performing Anastomosis of Hollow Viscera by a New Instrument. M. O'Hara, Jr.
97 1. An improved Brace for Head Extension. 2. A Hard-Rubber Spring Brace for Lateral Curvature. Joseph M. Spellissy.

Kansas City Medical Index-Lancet, February.

98 Two Hundred and Thirty-seven Consecutive Abdominal Sections. Charles G. Davis.
99 Cerebral Hemorrhage. John Punton.
100 Report of a Case of Injury to the Shoulder-Joint. W. A. Braceklein.
101 The Value of Antiseptic Inhalation in Pneumonia. L. W. Dallas.
102 Report of a Case of Paralysis of the Intrinsic and Extrinsic Ocular Muscles Due to Traumatism. Flavel B. Tiffany.
103 Spanemia. Virginius W. Gayle.

Annals of Otology, Rhinology and Laryngology (St. Louis, Mo.).
November, 1900.

104 *Middle Ear Disease in Its Relationship to the Cranial Cavity. Otto J. Stein. With Abstracts of Five Cases. Carl Barck.
105 Report of a Case of Ulcerative Laryngitis Simulating Tuberculosis Which Promptly Yielded to Mercurial Treatment. Samuel Kohn.
106 *On the Correction of Old Traumatic Depressions of the Nose by Subcutaneous Plastic Operation. J. L. Goodale.
107 A Case of Persistent Laryngeal Obstruction in a Child. Samuel E. Allen.
108 A Case of Epidermoid Cancer of the Soft Palate. Carolus M. Cobb.
109 Papilloma of the Vocal Cords—A Report of Five Cases. W. L. Bullard.
110 The Surgical Treatment of Otic Sclerosis. Ricardo Botey.

111 *The Pathology, Diagnosis, Special Prophylaxis and Treatment of Tuberculosis of the Middle Ear. Seymour Oppenheimer.
112 Leucoplakia. J. L. Goodale.

American Practitioner and News (Louisville, Ky.), January 15.

113 Sequelæ of Scarlet Fever: Prevention and Treatment. John G. Cecil.
114 Fissure in Ano. T. W. Stone.

Colorado Medical Journal (Denver), January.

115 *Scarlet Fever and Quarantine. E. A. Kickland.
116 *Diabetes Mellitus—Report of a Case. R. F. Graham.
117 The Pathology of Infection. Wm. N. Beggs.

St. Louis Medical and Surgical Journal, February.

118 *Testimony of the Bones from the Madeleines of the Middle Ages on Confusion of Leprosy With Syphilis in Pre-Columbian Europe. Albert S. Ashmead.
119 *Lymphatic and Portal Affections Following Appendicitis. John C. Munro.
120 The Cutaneous Absorption of Methyl-oleo-salicylate. Ed. Gros.

Columbus Medical Journal, January.

121 Diagnosis of Pelvic Diseases. C. M. Taylor.
122 *Enuresis Caused by Eye-Strain. J. A. Frame.
123 Combination of Drugs. John Rauschkolb.
124 Railway Surgery in America. Clark Bell.

Medical Examiner and Practitioner (N. Y.), January.

125 An After-History of Applicants Rejected for Life Insurance. Andrew MacPhail.
126 Life Insurance Examinations. W. A. Nicholson.
127 Should Life Companies Discriminate Against Women? John K. Gore.
128 Illegitimacy. Lady Cook.

New Orleans Medical and Surgical Journal, February.

129 Additional Notes on the Nature and Treatment of Leprosy. R. H. L. Bibb.
130 Operation for Severe Perineoscrotal Hypospadias. F. W. Parham.
131 Spinal Analgesia. E. D. Martin.
132 Report of a Case in the Practice of Obstetrics. A. G. Wille.

Memphis Medical Monthly, February.

133 *Rectal Obstipation and Its Treatment. A. B. Cooke.
134 *Four Cases of Membranous Croup Treated With Antitoxin. T. J. Happel.
135 *Some Rectal Troubles. A. E. Cox.
136 Diphtheria. W. T. Watson.
137 The Treatment of Pneumonia, Past and Future. J. C. Young.
138 Extensive Skull Fracture With Recovery. A. J. Richter.

Northwestern Lancet (Minneapolis, Minn.), February 1.

139 Tuberculosis of Tubes, Ovaries and Peritoneum. R. E. Cutts.
140 Penetrating Injuries of the Eyeball. William R. Murray.
141 Compound Fracture of the Skull. J. Clark Stewart.
142 A Case of Subcoracoid Dislocation of the Humerus, With a Fracture of the Surgical Neck. A. E. Benjamin.

Atlanta Journal-Record of Medicine, February.

143 President's Address at the Atlanta Society of Medicine. T. V. Hubbard.
144 The Physiological Therapeutics of Dipsomania. C. A. F. Lindorme.
145 Recent Observations on the Treatment of Gonorrhea. Thomas C. Leitch.
146 *Attention Called to a Most Invaluable Medicine. N. F. Howard.
147 The Urine of the Horse in Pneumonia. M. D. Hoge, Jr.

AMERICAN.

1. **Gastro-intestinal Hair Cast.**—Jacobson reports and illustrates a hair cast of the stomach, extracted from a child 11 years old, who had been in the habit of swallowing her hairs. The symptoms were colicky pains, especially at night, constipation, gastric disorders, etc. The diagnosis was not clear by physical examinations, and exploratory operation was performed. The cast was peculiar in its showing a superior curve, almost rectangular. The author reviews the literature of similar cases at length, and calls attention to the fact that while the operation in cases where it was found was always experimental and exploratory, or was performed with the expectation of finding other conditions, the patient has in every case made an uninterrupted recovery.

2. **Infantile Scurvy and Rickets.**—The recognition of scurvy in young children is comparatively recent, the earlier errors in diagnosis being largely due to the fact that the principal symptoms confused it with articular rheumatism and the characteristic symptoms of petechiæ, spongy gums, etc., are not always present. The peculiar characteristics of scurvy in infants are the very grave appearance of the child in its severe forms, the rapidity with which it recovers under proper treatment and the rarity of fatal termination. Three cases are described illustrating the different types of the disease, one in which spinal disease was diagnosed, another where meningitis was suspected and the third case where the child suffered from almost complete paraplegia with the characteristic scorbutic symptoms. Hare remarks also on the fact that scurvy is a disease of the well-to-do, while rickets is a disorder of the poor, and he believes that the latter is largely due to general deficiency of nutrition and defective development rather than to any lack of the proper constituents in the food.

3. **Tuberculosis.**—The house problem in tuberculosis is treated of by Guerard, who notices the unhygienic conditions in tenement houses, lack of ventilation, overcrowding, etc. The facts are given as regards houses where tuberculosis seems to be a permanent infection, and he expresses the opinion that in some cases it may be that only destruction of the tenement will suffice to destroy the germs. The rules which should be followed as regards housing, sufficient air space, baths, and the hygienic problems generally are noticed. The author concludes his paper with a discussion of the financial aspects of the case, the money lost, loss of work, sickness and loss of life.

4. **Lupus.**—Varney has found the most satisfactory surgical treatment in lupus to be the curette, with which one can clear away the broken-down cheesy, degenerated tissue, leaving the healthy tissue as a foundation for growth. Electrolysis, in the few cases he has tried it, has given good results. Nitrate of silver is a valuable remedy, also arsenical paste which destroys diseased tissues only. Pyrogallic acid is also mentioned, but the special object of his paper is to present the therapeutic value of the *x*-ray, pointed out by Dr. Pusey, of Chicago. It has various advantages, it is painless, the exposure is short, and the area may be completely controlled. He reports a case in which this method was employed with good results.

9. **Woolen Yarn Truss.**—The use of the woolen yarn truss in infantile inguinal hernia is recommended by Boland, who gives directions for making it, as follows: "Measure with a tape line the distance around the child on the plane of the pelvic inlet, beginning with and coming back to the hernia, then carry the line down on the perineum and up and out in the gluteofemoral crease and almost to where it would touch the girdle part. Mark this length on the woodwork of the door or window casing, and at each end of it drive in a three-inch nail half-way to the head. Over these nails wind the worsted, previously rolled from the skeins as bought, just tight enough to keep from kinking, and use thirty to forty threads according to size and strength required. Remove the skein, tie in the two loose yarn ends, and in one end loop a foot of white tape, and the truss is ready." For applying it: "Carry it around the child with the long end at the affected groin, pass this longer end through the other loop and draw the long end down under the corresponding thigh and out and up in the gluteofemoral crease and tie the tape to the girdle. . . . The doubled and loosely twisted yarn is so elastic that it will keep up a constant hug that will make up any slack made by the motion of the child." He sums up his paper by saying that the use of some retentive will hasten and insure the natural tendency to cure. The worsted truss is easily made to measure at the bedside, is cheap, comfortable, can be worn by any infant, but with this as with any other truss vigilance and intelligence must counteract the associated causes of hernia.

10. **Disinfection in Diphtheria.**—Veeder notices the possibility of infection of physicians treating cases of diphtheria, and advises the use of precautions. The routine he has adopted is: to be provided with squares of antiseptic gauze and corrosive sublimate tablets. A square of such gauze can be held over the mouth and nostrils with the left hand while the right is free to use the tongue-depressor and swab. Both hands and face should be wet with sublimate solution before and after examination, and the gauze be burned after use. This, together with frequent spraying and cleansing of the mouth, throat and

nostrils, and bacteriologic testing, offers a very complete security against receiving or carrying infection. He notices the diphtheroid or staphylococcic sore throat as being the favorite tract for diphtheria infection, therefore all diphtheroid throats should be considered as suspicious.

15. **Pneumonia.**—No routine treatment for pneumonia exists, but there are many approved therapeutic measures. Among these Crook mentions the patient's surroundings, a cheerful, well-ventilated room with temperature between 65 and 72 degrees, digestible liquid food and cold applications to the chest. Poultices are not much advocated of late, blood-letting is coming more in favor in florid cases and where the heart is seriously embarrassed by the pulmonary obstruction, or cyanosis or dyspnea prevails. The hypodermic injection of saline solution in connection with the blood-letting is advised by Michel. Arterial sedatives are less favored than formerly, though they still have some advocates. Routine purgation and antipyretics are generally condemned, and the profession is still at variance to some extent as regards the use of opiates. Crook thinks that on the whole they should not be resorted to until insomnia, pain or restlessness renders them necessary. Alcohol is losing favor and the weight of opinion is against the use of digitalis. Oxygen inhalations are safe, but their usefulness is disputed. As regards specific medication to destroy the pneumococcus in the blood, there is some evidence of the value of the salicylates, creosotal and the silver salts internally. Serumtherapy of the disease is still in the experimental stage, a standardized serum is not yet available, and the progress in this direction during 1900 has been very slight.

16. **Periodical Insanity.**—According to Defendorf periodical insanity is one of the most frequent of morbid psychoses, readily diagnosed in first attacks and not associated with any rapid general mental deterioration. The prognosis is not good as the attacks are likely to recur with varying intervals, throughout the patient's life.

17. **School Inspection.**—Greene describes the system of medical examination of school children in Boston. The inspectors are generally chosen from among the younger members of the profession and, though the pay is small (only $200), the positions are honorable and desirable and may indirectly help in building up the physician's practice. Monthly reports are required to the secretary of the board of health, which generally supervises the work. An association of inspectors has been formed, presided over by the chairman of the board, for aiding in the work by profitable discussion or to further mutual co-operation. Children suffering from contagious diseases and those from non-contagious but more or less disabling disorders are especially the objects of inspection; the inspectors are provided with diphtheria culture outfits, and every precaution is taken against possible contagion. Children affected with tuberculosis are advised to stay away from school, though it is not said that they are excluded. The vision of pupils is another important subject investigated, and where defect appears the parents are advised to consult oculists. Still other advantages from the inspection have been the calling attention to points of cleanliness, etc.

18. **Tetanus.**—Bissell reports two cases of tetanus following apparently clean surgical wounds. He is inclined to suggest a long-latent, old infection to account for the disease here, and refers to cases reported by Kaposi, Cheeseman and others as supporting this view.

19. **Adhesion of Soft Palate.**—Koenig's case was one of adhesion of the soft palate to the posterior pharyngeal wall, producing complete nasal obstruction. The condition was entirely relieved by operation under local cocain anesthesia. After the operation a gauze plug was used for the first two days, and then it was replaced by a hollow silver plug fitted to the cavity, through which nasal breathing was possible. Healing was complete in three weeks.

20. **Erysipelas.**—Keirle reports great success in the treatment of erysipelas, according to the following *plan:* The affected area is first *enclosed* in a painted ring of tincture of iodin. The ring is not to be started *at* the margin of the reddened area, but 2 *to 3 inches from it*, and a sufficient number of coats should be applied to cause a slight desquamation of the skin. At the same time the whole surface enclosed in the ring is to be covered with an ointment of ichthyol, about 1 dram to 1 to 2 ounces of vaselin. This is covered with a piece of gauze and a hot stupe applied and changed about every four hours. At the end of twelve hours the ichthyol ointment is washed off and a fresh coat applied, and if the iodin has not had sufficient effect, one or more new coats are applied. Internal treatment may or may not be instituted, as the result is the same in either case. Although both iodin and ichthyol are used in the treatment of erysipelas the author has not heard of any cases treated as above. Three or four days of this treatment have not failed to stop the trouble, the inflammation not crossing the painted line of iodin except in one case; in which another ring painted further out, and the same treatment as at first effectually stopped the spread of the trouble. He does not claim originality for this treatment, but can not remember seeing it described elsewhere.

21. **Stethophonometry.**—Abrams remarks in regard to the difficulties of testing the different degrees of intensity, etc., of sounds and the methods of their measurements. The method by the use of rods, which was reported by him in an earlier article, is inconvenient and somewhat impracticable, and the other method, by measuring by different points of the chest to which the sounds are conducted, is relatively inaccurate. He has, therefore, devised a *stethophonometer*, which he illustrates. It is constructed on the disc-valve principle and is composed wholly of hard rubber. There are three perforated discs in its composition, the middle disc being made to revolve by means of a handle attachment, so that its opening may be made to approach or recede from the opening in the other two discs, thus increasing the resistance to transmission of the sound wave. On the face of the disc nearest the auscultator is a scale by which the intensity of the chest sounds may be measured. On one side of the disc the bell of the stethoscope is fixed and on the other side a plug, the size of which may be varied to fit any stethoscope. This plug is perforated and in the perforation may be fitted a rubber cork, if necessary, to offer still further resistance to sound. This, however, is rarely necessary. This stethophonometric attachment can be easily removed when found necessary to use the stethoscope in the ordinary method.

23. **New Ophthalmometer.**—Aiken describes a new ophthalmometer which he thinks offers practically as favorable results, at less expense, than the original expensive and bulky instrument employed.

24. **Combined Gynecologic Operations.**—Sutton notices the fact that some years ago it was customary, when double operations were required, to make only a single one at the time with the result that the patients were sometimes laid up for weeks or months or recovering from one operation only to pass into another. He points out that of late it has become customary to do a number of operations under one anesthesia, and he reports fifteen cases and the time employed in each. Various operations, such as curettage, tracheotomy, craniotomy, laparotomy, etc., are all performed at once.

26. **Buboes.**—After describing the anatomy, pathology, diagnosis, etc., of the various forms of buboes, Griffith details his own treatment, which is to hurry up the formation, using hot fomentations, and when suppuration is demonstrated by fluctuation, puncture and wash out, using thorough syringing with hydrogen dioxid and inserting a drain. Dry dressing is applied, sufficient to absorb the discharge. The next dressing and washing should be done in twenty-four hours, and after that at intervals of two to four days. The hygiene of the patient should be looked for. Alcohol, fried, greasy, and indigestible foods should be avoided. He does not offer this as an original method of treatment, but it is one that has met with success in his hands and which has his approval.

28. **Appendicitis.**—The conditions of appendicitis are described in detail and very completely illustrated by Abbe. There is evidence that the stone does not begin to form until

the stricture has contracted to so small a caliber that the exfoliated epithelium is unable to pass into the colon in the ordinary way. This debris of epithelium, irritating by its presence, begets proliferation, pus cells, etc., and sets up the mischief in the appendix. The structure of concretions in all the cases he has found has been epithelial, though rarer cases may occur when food particles may be their basis. He holds that the attack of appendicitis recognized by the patient is in most cases the end of the disease, the stricture having existed for many years. As regards the difference between medical and surgical treatment, there is no doubt that many do get well under medical care alone, but the surgeon can say that the vast number of so-called medical cures are mild attacks and the disastrous ones only rarely give spontaneous cure. This may occur with ulceration into the bowel or even the bladder. He discusses the recuperative power of the stomach under special conditions, the life of the cells, etc., at some length.

29. **Cardiac Compensation.**—Manges reviews the cardiac disorders in regards to the question of compensation, and sums up by stating that hearts which have been attacked by actual organic valvular diseases from any cause have no longer an absolutely normal myocardium, since the latter has been involved in various foci. Any defect in the valvular apparatus is compensated for a longer or shorter period by hypertrophy, which in turn is followed by changes in the parenchymatous muscle cells, of interstitial connective tissue, or both, or in the ganglion cells or the nervous fibers, or both, which may finally result in such a weakening of the heart walls that the organ is no longer able to propel the blood in normal amounts, as needed by the system. The causes of this may be either one or both, distention of the cavities from leakage of the valves or it may be due to defective nutrition or myocarditis, myocardial sclerosis, anemia, chronic or acute intoxications, mechanical overstrain or other causes. If nutrition of the heart is maintained and the work it is to do regulated in time, these myocardial changes will not exert any deleterious action on the cavity, but may be even conservative to the heart as such until the appearance of arterial sclerotic changes to which all parts of the body are ultimately liable. The hypertrophied heart is more liable to arterial sclerosis of the coronaries and chronic myocarditis, yet with proper care for good nutrition and the work of the heart the disease may be controlled for a long time. The most important causes of lack of compensation are here reviewed in detail. The first of these is anemia, the most potent and common, together with infections; then disturbances of local nutrition, of which coronary arterial sclerosis is the most important and serious; and again, increased work of the heart due to overstrain, parturition, alcoholic excesses, tobacco excesses, etc. Purely functional cardiac disturbances as causes of decomposition are rare; marked mental excitement may produce rises in the arterial pressure acting in this way. Death from broken hearts may be accepted as an actuality. Finally, he maintains as a separate group those unfortunate cases where the improper administration of cardiac drugs, for example the use of digitalis, and at present the abuse of the Nauheim method and exercise, causes failure in compensation. He has seen such cases.

30.—See abstract in THE JOURNAL, xxxv, p. 1172.

31. **Spinal Curvature.**—Freiberg emphasizes the importance of spinal curvature, its effect on nutrition, general health, displacement of viscera, and impairment of the muscular system, and the fact that it shortens the expectation of life. He then passes on to its treatment, pointing out that it is rotary lateral in its character, and that forcible correction alone is not the proper method for its treatment. Mobilization of the spine is the one thing to be striven for, and it implies the attainment of an over-correction if possible. The methods and apparatus are described. The development of the chest is the next indication which is suggestive of gymnastic work with or without apparatus. If it is to be accomplished by these measures, the development of all the muscles is important. The author recommends the Swedish system of gymnastics, but suggests avoiding all complicated movements, especially the lateral flexions. In some severe and resistant cases we are not successful in getting satisfactory results by these methods; of others, he has had experience thus far only with the Bradford and Brackett method for the forcible correction in such cases, and the results seem to have been encouraging.

Resinol.—In the notice in THE JOURNAL, of February 9, ¶29, p. 403, of Dr. Reynold's paper, resinol was credited with the effects which the author stated were due to subiodid or oxyiodid of bismuth, which he considered almost a specific in diseases of the gastro-intestinal tract. Of course, the use of resinol internally under such conditions could not be indicated.

34. **Influenza.**—From his own experience, personal and professional, Shields believes influenza to be transmitted directly from person to person, and that the first symptoms in the epidemic exhibit themselves either as bronchitis or coryza or an attack of rheumatism, the respiratory symptoms appearing later. He has never seen gastro-intestinal symptoms occur as the primary phenomenon. Of the nasal sinuses, the frontal is the most frequently affected, causing violent headaches. He insists on the importance of the recognition of the transmissibility of the disease. The drugs which he relies upon are: 1. Quinin, which kills the bacillus. 2. Calomel; a few large doses given in the beginning of the disease seems to ameliorate the symptoms markedly in many cases. 3. Iodin, especially in the form of hydriodic acid. For the nervous depression he has found phosphorus more valueble than strychnin. He thinks that benzoate of soda may be of some advantage, though he does not speak of it from personal knowledge. Muriate of ammonia has been his standby for the bronchial symptoms, exerting also its good effects upon the liver. The coal-tar preparations, he thinks, may have unfortunate effects, and he has placed more reliance upon opium or codein as an analgesic.

35. **Congenital Pyloric Stenosis.**—The case reported by Nicoll is that of a child 5 weeks old, which had been born healthy and remained so for about a week, excepting that in about fifteen to twenty minutes after each meal he vomited the entire contents of his stomach. No symptoms of dyspepsia, but gradual emaciation from lack of nourishment, appeared and the dilated stomach stood out on the attenuated abdominal wall, showing marked peristaltic waves. After some hesitation an exploratory operation was made and the pylorus found represented by a bulky ring of muscular or fibroid tissue. A pylorectomy appeared useless in the child's feeble condition, and, therefore, an incision was made above the ring in the stomach wall, and he performed a Loreta operation; a divulsion, from within, of the constricted pylorus was performed. The infant made a perfect recovery and has had complete relief from the previous trouble; excepting a slight rickety tendency, he is now, twelve months later, in perfect health. The author discusses the symptoms of the condition, the apparent cause of the vomiting, progressive emaciation, physical signs of the stomach with emaciation of the abdominal walls, the prognosis of the condition, its treatment and the theories of its causation. As regards treatment, only surgery gives a hopeful prognosis. As regards causation, the theories of congenital developmental aberration, of hypertrophy of the muscular walls of the pylorus, spasmodic contraction from gastric irritation, and chronic inflammatory processes are noted, but no positive opinion expressed. The important element in the cases is that of diagnosis; the trouble may be taken for infantile marasmus.

38.—See abstract in THE JOURNAL, xxxv, p. 1361.

50. **Diphtheria.**—This disorder was one of the most fatal diseases in Boston, the mortality being from 30 to 50 per cent. until the introduction of antitoxin, when it became a comparatively insignificant factor in the death-rate. Burrows' article gives a tabulated statement of about 2,000 cases of diphtheria, in regard to their mortality, ages, etc. The death-rate decreases from infancy to adult life. In the great majority the diphtheritic membrane was observed in both tonsils, and often elsewhere. There were 71 cases of nasal diphtheria. He insists on the importance of taking early cultures, but not waiting for their development before administering antitoxin. In 65 per cent. of the cases there was some form of cardiac dis-

turbance. The total number of cases of cardiac murmur was about 50 per cent. of the whole. The pulse is almost always feeble; acceleration and rapid pulse after the initial period means a guarded prognosis, and demands continued rest in bed. The use of antitoxin has made albuminuria rare; in 1757 cases, in none was there more than 1/4 of 1 per cent. found. There were 337 cases of laryngeal stenosis, 213 of which were intubated and 124 recovered with antitoxin alone. Of the 213 intubated, 96 died, 37 within 24 hours after admission into the City Hospital; and 40 during the acute stage, from toxemia. In 3 cases subsequent tracheotomy was performed, but all 3 died. He believes that the experience here obtained leads to the conviction that primary tracheotomy no longer has any place in the treatment of simple diphtheritic laryngeal stenosis. Complications, such as enlargement of the glands, ear disease, paralysis, etc., are noted. A large proportion of the fatal cases were moribund when received. There was a total of 240 deaths, 172 or 71.6 per cent. during the acute stage of the disease; in 131 cases there was a mixed infection. As regards treatment, antitoxin was the standby, but the author emphasizes the value of alcoholic stimulants, hot packs, and rectal feeding in cases where vomiting occurs. The experience teaches that the treatment can be best done by giving antitoxin early in large doses and at frequent intervals, especially in severe cases.

51. **Acute Interstitial Nephritis.**—From a study of three cases, the second occurring after an abortion, the first with general streptococcic infection, and in the third case, otitis media with bronchial pneumonia of streptococcic origin, Howard has been able to confirm Councilman's observation of the occurrence: 1. of plasma cells, lymphocytes, polymorphonuclear leucocytes in acute interstitial nephritis. 2. The presence of lymphocytes and plasma cells in the dilated vessels. 3. Mitosis and evident ameboid activity of plasma cells in both blood-vessels and tissues. In addition to the cells described by previous authors, he found large numbers of typical eosinophilic leucocytes in the interstitial exudation and in the blood-vessels in acute interstitial nephritis. In some places, in one case, these were the most numerous cells in the exudation. The eosinophilic leucocytes in the lesions of acute interstitial nephritis are for the most part brought to the part by the blood-vessels, and reach the interstitial tissue by emigration, but there is evidence—in one case—that they may be formed locally from plasma cells. The large phagocytic cells were not found.

52. **Cardiac Anomalies.**—Hektoen describes two cases of cardiac anomalies, one of defect of the septum between the pulmonary arteries and the aorta, and reviews similar reported cases, and one a peculiar small passage under the base of the anterior aortic valve, with regurgitation, hypertrophy and dilated arterial duct.

55. **Physiologic Cardiac Dilatation.**—Prince points out that the mitral valve is surrounded by circular muscular fibers, which he calls the mitral sphincter, though they are really a portion of the great cone of circular fibers that squeezes the blood out of the ventricle. The main point of his paper is its clinical significance shown under certain conditions, such as direct nervous excitement, etc. The mitral sphincter is forced to either dilate or prevented from sufficiently contracting, so as to produce the condition of mitral insufficiency and regurgitation. This may happen even when the dilatation is not sufficient to be detected by the usual methods. He points out the pathologic conditions in which this may occur, such as fatty degeneration and degenerative diseases generally, aortic stenosis, etc. He insists on the importance of recognition of this physiologic dilatation and physiologic valvular incompetency apart from pathologic varieties, and says we should question whether murmurs, dilatation, and irregularities thus occurring are in part or wholly physiologic, and, therefore, in part temporary or permanent, curable or incurable.

59. **Suprarenal Capsular Hemorrhage.**—Some degree of congestion of the suprarenal gland is held, by Mattei and Spencer, to be always present in the new-born. Hamill reports a case of a child who died shortly after birth, with pyresis in which there was found extensive hemorrhage into the right suprarenal gland and perirenal tissues, compressing the kidney. The only normal tissue found was within the infiltrated cortex. Two other cases are also reported, which are somewhat similar. In one there was a hemorrhage into the cortex and in the other the central sac containing a small amount of brownish, grumous material having the appearance of altered blood. In all three cases there was a papular eruption on the arms, shoulders and chest. The cases are discussed at length and the author seems to think that the causes of these occurrences in still-born children are probably prolonged and difficult labors, especially those requiring manipulation and delivery by the breech. In some infants dying within a few days after birth this factor may still be important in the etiology, but in the great majority some form of infection is responsible. This is the case in practically all instances where death occurs after the tenth day. The hemorrhage may be either unilateral or bilateral. In most of the cases which form the basis of his study it is bilateral. There are no symptoms which seem to be directly related to the lesion. When the hemorrhage is small, limited to one capsule, the symptoms would probably be slight. The immediate effect is now thought to be dependent on the degree of hemorrhage. In mild, non-infectious forms it is probably nil. He says, since these organs play an important part in the chemistry of the body, later consequences are likely to be serious, especially if the hemorrhage is at all extensive.

60. **Mitral Lesions in Children.**—Swift discusses the cases of anemic children with diseased mitral valves, as received in the hospitals, many of them coming as cases of chorea. Cases in private practice differ in no particular way. While ordinarily there is no evidence of dilatation or muscular degeneration, such an outcome is to be feared, and he asks whether the outlook for these cases is serious. The answer depends on the environment; the conditions being favorable, the outlook is good. We are not to expect the ordinary course of the inflammation on the endocardium in the adult, if the child is growing, as it must keep up a compensating hypertrophy. If general nutrition fails, the outlook is grave. The etiology of these cases is almost always, if not always, rheumatic. In the treatment we must overcome the cause, rheumatic poisoning, and improve the nutrition. If the heart is not doing its work well and the infection is active or the nervous system irritable, the best plan is to put the child to bed and keep it there. Prolonged quiet enables the heart muscles to regain their tone and reduces the nervous symptom. It may be wise also to administer some one of the salicylates, and he has found strontium salicylate the least irritating. This is important since the remedy must be kept up for a period of weeks or months. The formula is:

℞.	Sod. salicyl	ʒss	16	
	Tr. ferri chlor	ʒss	16	
	Ac. citric	gr. x		65
	Glycerin	℥iss	48	
	Ol. gaulth	gtt. viii		52
	Liq. ammon. citrat	ad ℥iv	128	

This is given after each meal, each dram containing 7½ gr. of sodium salicylate and 7½ m. of tincture of chlorid of iron. In some cases the original poisoning may have occurred through decayed teeth or inflamed tonsils, and these should be looked after. The great indication of care and treatment is to improve the nutrition. A few weeks of rest in bed and generous feeding will make the heart stronger, and decrease nervous irritability. Massage may be used if it is feasible. As the child recovers it should be gradually exercised. It is not wise, however, to push it. Two cases are reported.

70.—See abstract in The Journal, xxxvi, p. 527.

71.—See abstract in The Journal, xxxv, p. 1424.

73. **Blood-Vessels of the Kidney.**—Brödel describes the anatomy of the kidney, with special relations to the distribution of the blood-vessels, and elaborate illustrations. The principle landmarks are given for incision into the kidney.

avoiding the leading vessels. The description is only clearly intelligible by reference to the illustrations, for which the reader is referred to the paper itself. He suggests that the short incision be made into the lowermost posterior calyx, by means of a blunt dissection and through this incision the pelvis be explored. In the collapsed state this may be difficult, and a moderate distention of the pelvis with sterilized water or borax solution will facilitate the procedure. If this short incision does not prove satisfactory, the three middle calices should be carefully opened by means of an incision from within to the surface with a curved knife. The arrangement of the vessels in the kidney suggests the mattress suture as best adapted for approximating the two cut surfaces. Simple or interrupted sutures almost always tear the tissue and are unsatisfactory. The mattress suture should be placed at right angles, or nearly so, to the large vessels, and thus prevent any tearing of the kidney substance. If the bight of the suture be 1.5 to 2 cm., no strangulation will result. The pelvis is approximated with fine catgut sutures placed between the calices, and which involve only the fat, outer fibroid coat and the muscular layers. The second system of sutures should also be catgut, and should unite the region of the papillæ. They should be mattress sutures. The third system of catgut sutures should also be mattress sutures, and be placed parallel to the second, through the cortex near the bases of the pyramids. Occasionally this third system is superfluous. The capsule is then closed in the usual manner.

77.—See abstract in The Journal of January 26, p. 273.

78.—Ibid.

79.—Ibid., p. 274.

80.—Ibid.

81.—Ibid.

82.—Ibid., p. 275.

83.—Ibid.

84.—Ibid.

85.—Ibid.

86.—Ibid.

90. **Gunshot Wounds.**—Experience with gunshot wounds in the Philippines is given in detail by Robinson, who found that the Krag and Mauser bullets were alike in their effects, and the wounds they make generally aseptic. The Remington and revolver bullets, on the other hand, were generally infected. He gives a curious fact that the insurgents in the Philippines used the heads of matches for smokeless powder, producing still more decidedly infected wounds. The conclusions which he deduces are given as follows: 1. The modern gunshot wound is generally aseptic, and should be treated on this supposition. 2. Asepsis is due chiefly to the character of the bullet, and early application of first-aid dressing, and in minor degree to the velocity of the projectile. 3. Primary hemorrhage from modern gunshot wounds is exceedingly rare, the blood-vessels being displaced rather than cut by the rapidly moving projectile. 4. The "explosive effect" of the modern bullet is much less common than recent military literature would indicate. This peculiar destructive effect is produced by the character of the tissue struck, as well as by the great velocity of the bullet. 5. Gunshot wounds of the chest are rarely infected. Simple antiseptic treatment, with aspiration of the pleura in cases with severe hemorrhage is all that is necessary. 6. Gunshot wounds of the knee-joint are usually aseptic, but, if infected, demand immediate amputation to save life. 7. Excision of the elbow is always a justifiable operation in severe shattering or infection of that joint. Resection of bones of other joints is rarely necessary, erasion or amputation being preferable. 8. Injuries of nerves from gunshot wounds can often be benefited by operative interference or resection. 9. In modern military surgery, abdominal section for gunshot wound is not justifiable; the patient's best chance of recovery lies in conservative treatment without operation.

91. **Sarcoma of Uterus.**—From a study of 118 cases of sarcoma of the uterus, collected from the literature, Knott notices the importance of the early employment of the microscope. He concludes that the only treatment that accomplishes anything is the early and complete removal of the uterus and its appendages. The prognosis of sarcoma is not as favorable as in carcinoma of the uterus. In 20 of the 118 cases the result of the operation was not stated; in 12 of the remainder no rational operation was performed, leaving 86 cases of hysterectomy. Of this number 31 were said to have recovered, but in many of them the results were not followed for a sufficiently long time. The real mortality would probably be still higher.

92. **Multilocular Renal Cyst.**—After remarks on the rapidity of the disease, its occasional lack of symptoms and the diagnosis, Beck reports a case of which he gives an illustration. Operation was performed and the kidney removed, the patient succumbing to intestinal nephritis eleven days later. He states that it has become doubtful to him whether it will ever be justifiable to remove a cystic kidney, even when the other appears to be normal. The case described by him very strongly suggests that puncture followed by an injection of a drop of saturated solution of iodoform and ether should be tried on the small cysts, while, in the large ones, the peripheral walls should be excised. Very large cysts might even be totally exsected, the wound of the kidney being united by suture of formalin catgut. This can be done by the lumbar route, while the transperitoneal may be resorted to only in obscure cases or where the tumor is of very large size.

94.—See abstract in The Journal, xxxv, p. 1499.

96.—Ibid., xxxv, p. 323.

104. **Ear Disease in its Relationship to the Cranial Cavity.**—Stein insists on the importance of middle ear disease in its relation to the brain, and points out the methods of entrance of infection into the interior of the cranium, and the possibility of phlebitis, sinus thrombosis, abscesses, etc., the symptoms attending them, their diagnosis and prognosis.

106. **Nasal Depressions.**—Goodale reports a case of depression from septal abscess, corrected by elevating a portion of the triangular cartilage and one of correction of deformity from an old depressed fracture in the nasal bone, by subcutaneous implantation by a septal spur.

111.—See abstract in The Journal, xxxv, p. 1172.

115.—Ibid., p. 448.

116.—Ibid.

118. **The Bones in Leprosy and Syphilis.**—Ashmead argues that leprosy is not an American disease, but was introduced from Asia, and that in the early or middle ages leprosy and syphilis were largely confused. Leprosy attacks the bones of the digits, while syphilis may affect almost any bony region. Syphilis undoubtedly pre-existed in both continents.

119.—See abstract in The Journal of January 19, p. 205.

122. **Enuresis.**—Four cases of enuresis are reported in children from 7 to 12 years of age, in whom the usual remedies failed. Examination showed more or less ocular defect, producing eye-strain. Glasses were prescribed and the correction made with the result of relieving the symptom. Frame has not found much literature on this cause of enuresis, though Gould reported several cases cured by correcting the refractive errors. During his twenty years' practice, he has seen a number of resistant cases which he is now inclined to think may have been similar to those reported. He believes a certain number depend entirely on ocular strain, and, whenever medication fails, we should refer the case to an oculist for examination.

133. **Rectal Obstipation.**—Cooke reviews the causes of rectal obstruction, describing the Houston valves especially, and noticing their pathologic condition in which they may be the cause of inconvenience and serious symptoms. Other conditions that may produce rectal obstipation are spasm of the sphincter, hyperplasia and contraction of the levator ani, but the rectal valves particularly form the subject of his article. He says that the operation to relieve this condition, though slight, requiring neither local nor general anesthesia, nor long

confinement to bed, is nevertheless one of the most delicate in surgery. The operation in these cases is almost imperative, since the trouble is seldom recognized in its early stages. It consists simply in incising the valves' free margin down to their muscular coat, but for its proper and safe performance a very thorough knowledge of the anatomy of the parts is required.

134. **Antitoxin.**—Happel details four cases of diphtheria treated with antitoxin, with the intention of impressing on the profession the importance of using this remedy. He agrees with those who hold that there is no maximum dose of antitoxin. Generally speaking, it should never be less than 1000 or 1500 units in any case, and not less than 3000 units in any case of laryngeal diphtheria of malignant type, or in those of a longer standing than twenty-four hours.

135. **Rectal Disorders.**—The first of the rectal troubles noticed by Cox is constipation. He has not found divulsion of the external sphincter of benefit, but he has had one case cured by valvotomy, which he notices in detail because such operations are not usually performed by the general practitioner. The other rectal disorders mentioned are rectal ulcer, which he treats with dilatation of the rectum and tamponing, cleansing and scarifying the ulcer and using a 5 to 10 per cent. solution of nitrate of silver. Hemorrhoids are also mentioned; he treats them by ligation and incision of the tumor above the ligature.

146. **Rhatany.**—Howard calls attention to the use of rhatany as an astringent in cases of bladder trouble, giving his own case as an instance of its value. He got the idea of using it from reading Watson's Practice, but he has found that it is hardly at all in use by the profession at the present day. The paper is written for the purpose of calling the attention of the profession to its value.

FOREIGN.

British Medical Journal, February 9.

Ringworm Infection in Man and Animals. J. L. Bunch. Ringworm is generally considered to be due to two classes of fungus, microsporon and trichophyton, which can be distinguished to a certain extent clinically and microscopically, but still better in cultures. There is a less common form due to a fungus, which cultures give a faviform growth, but the lesions of this are either circinate or well-marked kerion. The trichophyton class includes two forms, the ectothrix, both large and small spored, and the endothrix, while an intermediate variety may be distinguished microscopically, in which the fungus lies both within and without the hairs. The etiology of these different forms is always obscure and Bunch relates the cases he has investigated of the disease contracted from the lower animals. Inasmuch as ringworm cultures can be inoculated into animals and vice versa, the possibility of the animals having received the infection from the human species in his case is excluded by the dates of the first symptoms. The first two cases were those in which the ectothrix eruptions were found and traced back to a horse. The third case was that of a boy with kerion of the scalp, the infection of which was traced to a terrier. The fourth case occurred in a child only four weeks old and a cat in the house was troubled with a bare patch, cultures from which gave a more luxuriant growth than cultures from the child, but their identity is not doubted. Still other cases are reported from cats, one of these being endothrix. Other animals from which the condition seemed to be derived were pet canaries and calves. These cases are the results of a very considerable study lasting over a period of three years. The number of such cases having such an origin must always be a very small percentage of the whole, as the infection has a much better chance to spread in the same species.

Finsen's Light Treatment of Lupus and Rodent Ulcer. Malcolm Morris and S. Ernest Dore.—The authors report their experience with the light treatment of lupus and rodent ulcer, giving first some details of the technique. A current of about 75 amperes and 60 volts is usually sufficient. The lenses must be in good order, clean and bright, and the water free from floating particles. The area treated is kept well within the focus of the light, but a smaller focus, if it can be borne, gives better results. The rays should fall perpendicularly on the compressing glass, and the compressors are kept in place by elastics. Resulting reaction varies somewhat with the idiosyncrasy of the patient. The time of its appearance varies from five to six to twenty-four hours. It is usually slight at first, becoming more marked later, and the duration of the sore, from primary hyperemia to complete healing, is from ten days to a fortnight. When situated over loose tissue, for example the eye, there is often great swelling of the neighboring parts, so that the eye may be nearly closed. Lupus vulgaris is the disease most amenable; sometimes one application is sufficient to cause the disappearance of a small isolated superficial nodule. Generally in extensive cases a single spot is treated daily, and the parts first treated are sufficiently healed in a few days to allow of their being treated again. If it is only a small area the application may be continued as long as possible, until soreness of the part necessitates cessation for a few days, when it is again continued. In extensive cases the treatment may have to be continued over a year and pyrogallic acid ointment, where there is great thickness of the skin, quickens the action. In rodent ulcer the healing often follows quickly after the application. In lupus erythematosus the effects have been marked, though not so certain as in lupus vulgaris. Constitutional effects are practically nil. The effects on the eye have been harmless, though the lids themselves have been involved. In one case, where the skin of the nose was treated, improvement took place in the mucous membrane and sense of smell. In preparing the patient, the crusts are removed with forceps, the area is then bathed with boric lotion, and, if there is any grease on the spot, with ether. The skin is then marked with a blue pencil to localize the application. After treatment the compressors are cleaned with spirit and carbolic acid. The disease surface treated is dressed if necessary, with a simple zinc lanolin ointment, or a paste with zinc, vaselin and starch, and a little boric acid. The unfavorable conditions are those which hinder the penetration of light, such as scarring, pigmentation, great vascularity, great depth below the surface of the disease, and the situation of the disease in a position to embarrass the application or make it inaccessible. In very extensive disease the condition is unfavorable, both on account of the long duration of treatment and the possibility of its spreading in one direction while another is being treated. Cases are favorable when the disease is limited, not spreading, and has undergone no previous treatment. The advantages of the method are reliability, painlessness, excellent cosmetic results, less liability to relapse, and avoidance of surgery. The disadvantages are the small area treated at a time, long time required and the expense. The rest of the paper is taken up with a report of cases.

Surgical Treatment of Migraine. Walter Whitehead.—The author recommends the use of the seton for the treatment of migraine, a method which he has employed for the last twenty-five years with the greatest success. The seton is introduced through the skin at the back of the neck, and instructions are given to move the tape from side to side each day. This should be worn interruptedly for three months at least, in the first instance, and if the symptoms recur, a second seton ought to be introduced.

The Lancet, February 9.

Gastric Hemorrhage and its Surgical Treatment. A. W. Mayo Robson.—The conclusions reached by Robson, concerning the treatment of gastric ulcer, are: 1. All cases of acute uncomplicated gastric ulcer should be submitted to thorough medical treatment in the shape of long-continued rest and attention to the diet, the patients not being allowed to get up or resume solid food until at least a fortnight after all disappearance of the pain. 2. Where the ulceration persists and proves intractable to medical treatment, or where relapses occur, gastro-enterostomy should be performed so as to secure physiologic rest and relieve the hyperacidity of the gastric juice nearly always found in such cases. 3. Perforation demands immediate surgical treatment. 4. The complications of disabling adhesions around the stomach and pylorus, pyloric contraction, and hour-glass contraction due to chronic ulcers leading to pain, dilatation, loss of flesh, and general impairment of health, now often treated as chronic indigestion, should be treated surgically. 5. In recurring or so-called chronic hematemesis from gastric ulcer surgical treatment is decidedly called for. In acute hematemesis, further accuracy in diagnosis as to the size of the bleeding vessels is urgently needed; and the co-operation of the physician and surgeon is advisable in all cases of hematemesis, so that if relief be not obtained by medical treatment, surgical means may be adopted if the bleeding is believed to occur from a large vessel; but seeing that capillary hemorrhage is capable of relief by medical means alone, medical should always precede surgical treatment.

A Plea for More Careful Study of the Symptoms of Perforation in Typhoid Fever with a View to Early Operation. William Osler.—The author pleads for an early diagnosis of symptoms in perforation in typhoid, points out the diminishing mortality of late years and the possibility of saving many patients if the condition is recognized before peritonitis has fully set in. He lays down a schedule of symptoms to be observed: the character of the pain, locality, the distention or otherwise of the abdomen, limitations of respiratory movement, percussion and auscultation signs, the rectal and genito-urinary symptoms, facies of the patient, changes in the pulse, temperature, hiccough, vomiting and leukopenia and condition of red blood-corpuscles and the hemoglobin. These are all indicated, with many other more detailed symptoms. The *most constant symptom is sudden pain, increasing in intensity* and recurring in paroxysms, and this with increase of pulse rate, distention of abdomen with great tenderness on pressure and rising leucocytosis make the diagnosis probable. A surgical colleague should be called early to share the responsibility, and in doubtful cases the patients should be given the benefit of the doubt and operation be urged.

Observations Based on the Probable Mode of Formation of Urinary Stone, Relative to its Recurrence and Prevention. Reginald Harrison.—The great frequency of recurrence of vesical calculus with the modern operation of litholapaxy has led Harrison to call attention to the treatment of the bladder following the operation and the preventative treatment based upon the mode that it is held urinary calculi are formed. He has for some time regarded all cases operated on for stone as suspicious until a sufficient interval has elapsed to free these from this imputation. The patient should be watched, and, if the condition of the urine becomes abnormal in any way, the bladder should be carefully attended to and washed out as for exploration, so as to remove any small forming concretions before they get large. In some cases where the bladder is sacculated, and to make doubly sure, it is well to wash out with the evacuation catheter and aspirator, as after litholapaxy. The causation of stone is connected with some as yet imperfectly understood chemical process, and Rainey's experiments as to artificial production of these formations are noticed. We have probably paid too much attention to the possible causes arising out of cases of special characteristic ingredients in the urine, instead of considering other conditions capable of bringing this about by consolidation of what is natural in the urine. He thinks that an increase in the quantity of urinary mucus may provide a basis for stone formation and an uncleanly condition of the urine may be a favoring condition. Some years ago he called attention to a soluble and digestible salt of boric acid, borocitrate of magnesia, which has a valuable action in sterilizing the urine. Drugs such as the benzoates of sodium and ammonia, hyposulphite of sodium, etc., are also exceedingly useful. After noticing several cases he calls attention to the general principles, which should not be forgotten, of noticing abnormalities, such as excess of urates, uric acid, and oxalates, but for the most part his contentions are based on proportions which may be normal. In the operation for removing stone from the bladder, two things should be looked after: 1. After every crushing operation it should be insured that every particle of debris is removed. A bladder obstructed by enlarged prostate is *apt to resemble the section of* a coarse bath sponge rather than the outside of a teacup, and the chances for *enlargement of particles are greatly increased.* 2. Care should be exercised in any kind of operations to avoid *introducing rough scar tissue into the bladder. Phosphatic concretions on rough uneven surfaces are likely to be formed.*

Archives Generales de Medecine (Paris), January.

Mercurial Injections in Hemorrhagic Diseases. A. Lusignoli.—This communication asserts that hemorrhagic affections, such as scorbutus, purpura and Werlhoff's disease, are produced by a special micro-organism whose products pass into the blood. These various diseases are all of the same nature and differ merely in intensity. The writer announces that they can be cured by intravenous injections of 1 to 4 mg. a day of mercuric chlorid, according to Baccelli's method. He describes five cases cured in a week by this treatment.

Circling for Fractures of the Patella. P. A. Cassedebat.—Extremely favorable results were obtained in a severe case of fracture of the patella, which would inevitably have left a deformity if treated by any other method than circling. Berger was the first to call attention to the advantages of passing a silver wire around the fractured patella, thus holding the fragments together in a loop, instead of suturing them together. Cassedebat is so impressed with the value of the method that he advocates it as a routine measure, instead of reserving it for the gravest cases.

Progres Med. (Paris), January 26 and February 2.

Mountain and Balloon Sickness. E. Guglielminetti.—The project to build a railroad to the summit of the Jungfrau has given a new impetus to the study of the effects of rarefied air on the system. The writer of this profusely illustrated article spent two weeks on the summit of Mont Blanc, with a number of workmen, and experienced an acute attack of mountain sickness. His companion, Dr. Jacottet, of Neuchatel, died after five days of suffering, and several of the workmen were affected. None was relieved at any time by inhalations of oxygen. He is convinced that mountain sickness is essentially the result of mechanical disturbances in the circulation; the diminished atmospheric pressure leads to the accumulation of blood in the peripheral vessels which are gorged, while the arteries are depleted, with consequent anemia in the brain. The pulmonary vessels swell, the blood stagnates in them and the cavities of the right heart become dilated. Chemical disturbances—the anoxyhemia—have a subordinate rôle. Treatment should be addressed to the circulation, with remedies that act on the vessels and on the heart, such as caffein, strychnin and subcutaneous injections of salt solution. [Aron has recently published an experimental study of the effects of rarefied air. He found the inhalation of oxygen effective in banishing the cyanosis and disturbances experienced in the pneumatic chamber, but he noted that the oxygen, while materially relieving, did not restore the respiration to normal, confirming the assumption that beside the chemical, important physical factors are also at work in mountain sickness.—Zeitschr. f. Klin. Med., xii. Ed.]

Revue de Medecine (Paris), January.

Nephritis of Pregnancy. E. Gaucher.—The nephritis of pregnancy is of an autotoxic nature and, consequently, *epithelial at first.* If the cause persists—either prolonged intoxication or repeated invasion from successive pregnancies—the lesion becomes interstitial and assumes the anatomico-clinical characteristics of chronic, mixed nephritis, predominantly interstitial. Whatever the nature of the poison, whether mineral, vegetable or animal, all varieties of toxic nephritis have the same evolution.

Re-education of the Movements of the Heart. F. Lagrange.—A series of pulse-tracings are given to demonstrate the efficacy of systematically applied exercises in regulating anomalies in form, amplitude, frequency or rhythm of the arterial pulse. Thoracic aspiration is an important indirect aid in drawing the blood in the direction in which it is impelled by the systole. The lung can be made to co-operate in forcing the blood along. Massage is another means of promoting the circulation in case of asystolia. Deep massage of the abdomen empties the veins, especially the portal vessels, and the amount of blood in the arteries is proportionately increased, augmenting their resistance and thus regulating the action of the heart in turn. The wild pulse observed while the heart is comparatively empty approximates to normal as the flow through the heart is increased. On the other hand, in arteriosclerosis, the indications are the reverse, the arterial tension requires to be reduced instead of increased. Massage is also the remedy in this case, but not deep, mechanical, as before, but superficial. The aim is to induce vaso-dilating reflexes by lively, superficial physiologic friction, slapping and pinching. When this is applied lightly to the four members, avoiding the trunk, the arterial tension is reduced, the blood drawn to the periphery and the functioning of the heart favorably modified.

Tendon Reflexes in Typhoid Fever. P. Remlinger.—The tendon reflexes were exaggerated in 32 per cent. of the cases of typhoid fever examined by Remlinger, diminished in 17, abolished in 29, and unmodified in 22 per cent. His impression is that the exaggeration occurs in the grave, ataxic and ataxo-adynamic cases.

Traumatic Diabetes with Throat Symptoms. P. Vergely.—Almost every one of the complications and nervous symptoms of ordinary diabetes are seen in the traumatic variety. The glycosuria may not appear for a long interval after the trauma, which probably merely rouses some latent predisposition in the organism. Any unusual, strange, nervous phenomenon that can not be traced to a neurosis or organic lesion, should suggest the possibility of a disturbance in nutrition, and examination of the urine will reveal its significance. In the case described, dyspnea, simulating angina pectoris, was the first and, for months, the only symptom of the traumatic diabetes.

Allg. Med. Cent. Ztg. (Vienna), January 23.

Colloid Silver a Specific Against Sepsis. P. Viett.—Credé's colloid silver is not toxic, and Viett uses it in larger quantities than is generally recommended. He considers it a specific against sepsis. It is especially valuable in country practice and completely fulfils Credé's claims for it in this respect. In puerperal sepsis, appendicitis, etc., Viett rubs the silver salve—unguentum Credé—on regions remote from the morbid process, in some cases using as much as 12 gm. in nine hours for an adult, 8 gm. in eight hours for a child of 7, and 2 gm. a day for an infant of 3 months.

Beitraege z. Geb. u. Gyn. (Leipsic), III, 1 to 3.

Experimental Tests of Various Methods of Resuscitating the Newly Born. B. S. Schultze.—Spirometer tracings are given showing the superior efficacy of Schultze's swinging method over all others for inducing artificial respiration in new-born infants. Tests on 29 cadavers of still-born infants showed that swinging freed the lungs from mucus and rendered energetic inspirations possible. Sylvester's method was the only one to be compared with it.

Etiology of Malignant Tumors. A. Hegar.—The cell of a malignant tumor is an injured tissue cell, whose differentiation has been impaired. The injury may have occurred in embryonal or extrauterine life or possibly in the germ-plasma. Injurious factors are numerous, among them the products of bacterial metabolism have an important place. The tissue cell possesses the inherent faculty of growth, which is necessary to form a malignant tumor. A stimulus to proliferation is, however, required to set this faculty in action. The injurious factor and the stimulus to proliferate, in all probability, frequently originate from the same source, the toxins evolved by micro-organisms. In the prophylaxis of malignant tumors everything tending to the normal regeneration of the cells should be favored, especially by diet suitable to the individual, the occupation and the age. Infections of all kinds should be scrupulously avoided, gonorrhea and syphilis in particular. Local irritation of the tissues and stagnation of excreta should also be prevented. Local venous hyperemia should be relieved and abolished, and all defects in the epithelium prevented by a mild astringent or zinc or boricized salve.

Remote Results of Prolapsus Operations. O. V. Herff.—Surgical methods of treating prolapsus uteri are all unsatisfactory, as they can not restore the missing tonicity to the tissues. This can be accomplished only by therapeutic gymnastics and the avoidance of violent efforts on the part of the abdominal muscles. Herff reviews the remote results of 283 operations for prolapse. Complete working capacity was restored in 37.2 per cent. after simple colporrhaphy or perineorrhaphy; after complicated intervention in 50 per cent.; after vaginal or vesical fixation in 41.8 per cent.; after ventral fixation in 53.8 per cent., and after hysterectomy in 55.1 per cent. Freund's operation was performed seven times and the threads cut through in every case with only partial restoration of the working capacity; Mueller's operation was done in two cases, with complete restoration in one.

New Method of Shortening the Cervix. H. Fuchs.—The advantage of the operation described is that the vaginal portion is retained intact, with no cicatricial ring. The cervix is resected above, the lips of the os uteri detached and mobilized, but the connection with the vagina left undisturbed. Nine patients have been thus operated on at Kiel with eminently satisfactory results, and with no interference with pregnancy.

Beitraege z. Klin. Chirurgie (Tuebingen), December.

Experiences with Beck's Operation for Hypospadias. G. Marwedel.—Beck's method of forward dislocation of the urethra in the treatment of hypospadias was applied by Marwedel in seven cases, the children ranging between 1 and 9 years of age. In 3, the operation was completely successful; in 2, a slight secondary operation was necessary. In one of the others a large hematoma formed, requiring the Thiersch operation. In this and another case erections interfered with the healing. A permanent catheter was found indispensable in nearly every case, contrary to Beck's experience. No necrosis of the urethra was observed, but in two cases a small urinary fistula persisted at the lower angle of the wound, although the urethra had not been injured and the wound had healed by first intention.

Appendicitis in Hernial Sac. F. Tacke.—A small lump was noted for three months in the right inguinal region. It suddenly increased in size and became extremely painful, the swelling involving the entire inguinal region and scrotum, with fever, vomiting, depression and diarrhea. The hernial sac contained a portion of the intact cecum and the suppurating appendix, perforated at the tip. Tacke has collected twenty-eight somewhat similar cases in the literature.

Rectal Exploration and Incision in Appendicitis. A. Langemak.—The advantages and necessity of rectal exploration in all cases of suspected appendicitis are announced by Langemak. He describes a number of cases in which the surgical intervention was by the rectal route, with the most satisfactory results, including a case of hemorrhage from erosion. Not a trace of ascending infection was observed in any case.

Irreducible Luxation of the Shoulder. E. Schoch.—One personal case is reported and fifty-four in the literature are reviewed. The results obtained by the various methods of treatment emphasize the fact that arthrotomy is the standard procedure in all recent cases. In older cases arthrotomy should be tried first, but if the head is found much injured, resection should be done. In his personal case, a young farmer, normal function for any kind of work was restored to the joint.

Esophagoscopy for Foreign Bodies. V. V. Hacker.—During the last eight years Hacker has had occasion to remove foreign bodies from the esophagus twenty-seven times. By the aid of esophagoscopy all were located and removed without injury to the patient, only one requiring gastrostomy. He explores with a sound tipped with metal or ivory, which grates when brought in contact with the foreign body. During this same period fourteen esophagotomies were done at Gussenbauer's clinic at Vienna for the same indications.

Operative Treatment of Basedow's Disease. B. Witmer.—The 23 cases of Basedow's disease operated on by Kroenlein are analyzed and followed to date in this communication. In 18 the operation was successful; in 2 it did not affect the course of the disease; 2 died, and the fate of 1 is unknown. The mortality was thus 8.6 per cent. Mikulicz reports 4.8; Czerny, 1 in 4; Kocher, 3 in 34, while all of Kummel's 20 patients were restored to their working capacity. In Rehn's collective statistics the mortality is given at 13.6 per cent.

Gazetta Degli Osp. (Milan), January 3.

Differentiating Receptacle for Gonorrheal Urine. I. Castracane.—The patient urinates directly into a flaring tube 2 cm. in diameter, holding about 300 c.c. It is bent into the shape of three Us in a row, thus automatically separating the urine into three portions, each of the same height and volume, easily inspected through the glass, which is graduated. Tests with colored fluids showed that the contents of the first loop are forced into the second and on into the third loop without blending with the following portions of fluid, although it is poured into the receptacle in a continuous stream.

Anales Del Circ. Med. Arg. (Buenos Ayres), December.

Serotherapy for Anthrax in Man. F. Dasso.—The anti-anthrax serum prepared by Mendez is much more powerful than Sclavo's or Sobernheim's. Dasso reports 130 cases treated with it, with the constant result of falling temperature, disappearance of the edema, general improvement and resolution of the ganglionary infarct. Nine of the patients died, all but two from secondary infection. The remainder of the cases all testify to the efficiency and specific character of Mendez's serum. The dose is 10 c.c., injected subcutaneously.

Antitoxin for Mosquito Bites. Voges.—Naphthalan is the substance which Voges calls an antitoxin for mosquito bites. He states that its action on the poison from the bite is as effective and specific as that of an antitoxin on the bacterial toxin. Voges is at the head of the National Department of Hygiene of the Argentine Republic.

Klinitchesky Journal (Moscow), December.

Experimental Embolism of the Coronary Arteries. A. Foxt.—The functional and anatomic alterations caused by embolism of the coronary arteries have been studied by Foxt on large dogs. He introduced minute seeds into the coronary arteries through the aorta. When the main stem of the anterior branch of the left coronary artery was completely occluded, death ensued in eight minutes from arrest of the heart, but when smaller ramifications were involved, survival for several days was possible. The obstructions in the finer branches disturbed the functioning of the neuromuscular apparatus of the heart and interfered with the establishment of collateral circulation. Marked arrhythmia and diminished systolic elevation were produced in every case and also pronounced mechanical dilatation of the cavities of the heart, especially the left ventricle, but these symptoms passed away as collateral circulation was established. There was always extravasation of blood around the occluded points and patches of anemia in the myocardium. Comparison of the results of this experimental research, and clinical experience of thrombosis and sclerosis of the coronary arteries, demonstrates that the chief cause of the disturbances in each case is the general, persisting anemia in the myocardium. The entire syndrome, subjective and objective, is the consequence of the intense disturbance of the tonicity of the muscle, resulting from this anemia, and the disturbed tonicity entails various degrees of mechanical dilatation of the different cavities of the heart. The collateral circulation that may finally be established is evidently inadequate for the maintenance, although it may sometimes prove sufficient for the regulating function of the heart under ordinary circumstances. Foxt's experiments also demonstrate a certain periodicity in the symptoms observed, which explains the fact that alterations in the coronary arteries are sometimes found at autopsies when no symptoms had been observed during life, owing to the remission of the symptoms at the time of examination.

Change of Address.

N. M. Black, 1801 Grand Ave., to 177 14th St., Milwaukee, Wis.

M. R. Bailey, 4324 Market St., to 331 South 13th St., Philadelphia, Pa.

G. E. Baxter, St. Luke's Hospital, Chicago, Ill., to Griggsville, Ill.

W. Bertrand, Rosa, La., to Cloutierville, La.

W. B. Burns, Deckerville, Ark., to Porter Bldg., Memphis, Tenn.

J. K. Castles, St. Joseph's Hospital, to Poor and Insane Asylum, Memphis, Tenn.

J. T. Caster, 817 South Cherry St., Nashville, Tenn., to California Creek, N. C.

A. Christiansen, Lock Box 602, to 510 Harrison Blvd., Wausau, Wis.

H. R. Coston, Haskell, Tex., to 2012 3rd Ave., Birmingham, Ala.

C. E. Coffin, Asylum, Neb., to Room 10, 1241 O St., Lincoln, Neb.

H. I. Davis, 3120 to 3146 Indiana Ave., Chicago, Ill.

V. W. Dunlap, Newport News, Va., to Rush Run, W. Va.

Ada Epperson, 695 Jackson Blvd., to 662 Monroe St., Chicago, Ill.

J. W. Enrel, 606 W. Adams St., Chicago, Ill., to Abingdon, Ill.

E. H. Gabel, Mary Thompson Hospital, to 740 N. Park Ave., Chicago, Ill.

M. R. Gage, Biloxi, Miss., to Sparta, Wis.

Emily J. Helze, 70 State St., to 6118 Monroe Ave., Chicago, Ill.

M. M. Hixon, Continental, Ohio, to Delphos, Ohio.

Chas. Hodgkinson, Roseville, Mich., to Detroit, Mich.

F. H. [illegible] to Wood Lake, Minn.

F. Hin [illegible] and Olive Sts., to 2330 Washington A [illegible]

E. E. Holtzen, St. Louis, Mo., to Lake Creek, Mo.

J. G. Hughes, Sheboygan, Wis., to 507 Stewart Bldg., Chicago, Ill.

A. P. Harrison, Kansas City, Kan., to Arlington, Mo.

H. Johnston, Clinton, La., to Hope Villa, La.

Emma J. Keen, 1618 Glenarm St., Denver, Colo., to Fort Collins, Colo.

A. E. Klein, Elmhurst, Long Island, N. Y., to Corona, Long Island, N. Y.

C. B. King, 390 N. Clark St., to 987 Jackson Blvd., Chicago, Ill.

T. C. Lyster, asst.-surgeon, U. S. A., Havana, Cuba, to Fort Schuyler, N. Y.

T. A. Lancaster, North Manchester, Ind., to 1236 W. 23rd St., Los Angeles, Cal.

B. J. McConvill, 626 Monroe St., to 243 Ogden Ave., Chicago, Ill.

R. K. Morton, 4421 Samson St., Philadelphia, Pa., to Lead City, S. D.

C. P. Mitchell, 994 Union St., Memphis, Tenn., to Ora, Ala.

W. J. McRoberts, Jefferson City, Mo., to Edgemont, S. D.

R. H. Moore, Trenton, N. J., to 1880 Seneca St., Buffalo, N. Y.

J. W. Mulick, McIntire, Ia., to Elma, Ia.

H. P. Packard, 1638 Pennsylvania Ave., to 1221 California Ave., Denver, Colo.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 7 to 13, 1901, inclusive.

George W. Adair, *major and surgeon, U. S. A., member of a* board at Fort Sheridan, Ill., to examine enlisted men for promotion.

Max A. Becher, acting asst.-surgeon, from Los Angeles to San Francisco, Cal., to accompany troops to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

William H. Corbusier, major and surgeon, U. S. A., member of board at Governor's Island, N. Y., to examine enlisted men recommended for commissions.

William D. Crosby, captain and asst.-surgeon, U. S. A., as Corbusier above.

Guy L. Edie, major and surgeon, Vols., relieved from further duty in the Division of the Philippines and assigned to temporary duty in the Department of California.

Louis T. Hess, lieutenant and asst.-surgeon, U. S. A., member of a board at San Francisco, Cal., to examine enlisted men for promotion.

John Van R. Hoff, major and surgeon, U. S. A., member of a retiring board in Washington, D. C.

John S. Marshall, dental surgeon, U. S. A., from Chicago, Ill., to Washington, D. C., to report to the Surgeon-General for instructions.

James C. Merrill, major and surgeon, U. S. A., member of a retiring board in Washington, D. C.

Robert W. Morgan, dental surgeon, U. S. A., from Lynchburg, Va., to report at Washington, D. C., to the Surgeon-General for instructions.

Edward R. Morris, captain and asst.-surgeon, U. S. A., in addition to his present duties, to act as examiner of recruits at the city of Detroit, Mich.

Edward L. Munson, captain and asst.-surgeon, U. S. A., leave of absence granted on account of sickness.

Robert T. Oliver, dental surgeon, U. S. A., from Indianapolis, Ind., to Washington, D. C., to report to the Surgeon-General for instructions.

William E. Purviance, captain and asst.-surgeon, U. S. A., member of a board at San Francisco, Cal., to examine enlisted men for promotion.

Charles Richard, major and surgeon, U. S. A., *member of a* board at Fort Leavenworth, Kan., to examine enlisted men for promotion.

Samuel S. Turner, acting asst.-surgeon, member of a board at Fort Sheridan, Ill., to examine enlisted men for promotion.

Robert Winn, acting asst.-surgeon, member of board at Fort Leavenworth, Kan., to examine enlisted men for promotion.

In addition to the above the following named medical officers were appointed to membership on boards to be convened March 1, 1901, at the stations designated, for the mental and physical examination of such candidates for the Military Academy as may be authorized to appear before them: Major John M. Banister, surgeon, U. S. A., and Lieut. Franklin M. Kemp, asst.-surgeon, U. S. A., at West Point, N. Y.; Acting Asst.-Surgeon John S. Fogg, at Fort McHenry, Md.; Maj. William O. Owen, surgeon, U. S. A., at Fort Thomas, Ky.; Capt. Harry M. Hallock, asst.-surgeon, U. S. A., at Fort McPherson, Ga.; Maj. Aaron H. Appel, surgeon, U. S. A., at Jackson Barracks, La.; Maj. Charles B. Byrne, surgeon, U. S. A., at Fort Sam [illegible] Henry I. Raymond, asst.-surgeon, U. S. A. [illegible] Maj. Marshall W. Wood, surgeon, U. S. A. [illegible] Mo.; Maj. Charles Richard, surgeon, U. S. A., at Fort Leavenworth, Kan.; Capt. Alfred E. Bradley, asst.-surgeon, U. S. A., at Fort Snelling, Minn.; Lieut.-Col. Henry Lippincott, deputy surgeon-general, U. S. A., at Fort Logan, Colo.; Acting Asst.-Surgeon Carle E. Bentley, at Fort Logan H. Roots, Ark.; Maj. John D. Hall, surgeon, U. S. A., at the Presidio of San Francisco, Cal., and Maj. Louis S. Tesson, surgeon, U. S. A., at Vancouver Barracks, Wash.

Special Order, No. 218, Headquarters Division of the Philippines, Manila, P. I., Dec. 21, 1900, reads as follows: Upon recommendation of the chief surgeon of the Division, the following named

Weakness of the heart is the complication most to be feared. In the fatal cases the operation is not in itself the cause of death, but it merely gives the slight impetus required. The operation was limited to resection of the struma in 19 cases with 1 death; enucleation, in 3, and ligature of the artery in 2 with one death. Generally speaking, Witmer concludes, the treatment of Basedow's disease is internal. If no improvement is manifest in spite of internal measures, surgical intervention should be resorted to. Symptoms of stenosis indicate operation.

Therapeutische Monatshefte (Berlin), December.

Prevention of Tuberculosis in Children. E. Feer.—Absolute cleanliness, sunshine, fresh air and exercise out of doors are the factors in the prevention of tuberculosis as well for children as for adults. Among the minor points Feer mentions that the bedding in hotels, etc., should be covered with a washable sheet to prevent infection from the blankets, and that a sheet should be spread on the floor for young children to play on, never putting them down on a carpet, especially in a hotel. If possible, the child should be confined to the sheet with a light, folding fence around it. The teeth should be carefully supervised, as tubercular infection may occur through a cavity at any age. Precautions should be multiplied in case of children with a tendency to glandular affections.

Atmocausis and Zestocausis. W. Stoeckel.—Treatment with steam is the only certain means at our command for controlling menstrual and climacteric hemorrhage, according to Stoeckel. It can be depended on in all cases without complications such as myomata, polypi, relics of abortion or much endometritic alterations. It is especially prompt and reliable in violent climacteric hemorrhages, and far superior to the curette for this purpose.

Zeitschrift f. Geb. u. Gyn. (Stuttgart), XLIV, 1 and 2.

Incipient Chancroid of the Portio. O. V. Franque.—The normal anatomic conditions of the uterus completely justify supravaginal amputation in case of commencing chancroid of the portio as a sufficient and satisfactory operation. Franque has not been able to find a single case in which the lymph-glands were involved. Even in the progressive and extreme cases the involvement of the body of the uterus is the rare exception. By the arrangement of the lymph-glands in the region, dissemination in this direction is against the current.

Severe Paralysis of the Stomach and Intestine, Especially After Operations. O. V. Herff.—Two personal observations are added to the 32 cases on record of acute paresis or paralysis of the stomach, inducing extreme dilatation and mechanical occlusion of the adjoining portion of the duodenum. All but 5 were fatal; 12 occurred consecutive to various operations, with nothing in common but the chloroform narcosis. The primary cause is probably injury of the nervous apparatus of the stomach from trauma of the spinal cord in some cases, in others from pathologic distention of the stomach from abnormal fermentations, and in others from the toxic action of the chloroform or from autointoxication. For a certain number of the cases no plausible explanation can be advanced. A predisposition existed in all of the patients, from preceding emaciation, debility or a chronic gastric affection. Many were convalescing from various diseases. In the majority of cases the paralysis occurred with no appreciable direct cause, the patients being still under surveillance in the hospital. The age in 70 per cent. was between 17 and 30. Persistent vomiting after chloroform should suggest the possibility of acute dilatation of the stomach from paralysis. When suspected, the stomach should be promptly and systematically rinsed and all food per os prohibited. The rapidly-failing strength should be sustained with rectal feeding, wine and faradization of the stomach. Rectal injections of 1 to 1.5 liters of salt solution will counteract the excessive thirst. The knee-elbow position or ventral decubitus may assist the treatment. The vomiting is the chief symptom, accompanied by violent pain and tympanism of the stomach, intense thirst, absence of gastric peristalsis and indications of cardiac insufficiency with normal or subnormal temperature. In 3 of the 5 patients who recovered chronic atony of the stomach persisted for years. Two were unmistakably saved by prompt rinsing of the stomach with chloroform water. Death is usually due to inanition or lack of water.

Zeitschrift f. Hyg. u. Inf. (Leipsic), XXXV, 1.

Survival of Micro-organisms in Spray. F. Kirstein.—Forty-two pages are devoted to the description of the tests at the Giessen Institute of Hygiene, which showed that when bacteria without spores, disseminated in fine spray, are exposed to the action of air and light they survive but a comparatively short time.

Zeitschrift f. Klin. Med. (Berlin), XXI and XXII, 1.

Gelatin Treatment of Aneurysms. J. Sorgo.—Six cases are described in which aneurysms were treated by injections of a solution of gelatin. Forty-two aneurysms treated with gelatin are also recorded in literature. Analyzing these 48 cases, Sorgo finds that in 18 the aneurysm was sacculated, and organized coagula formed in 13. In the 16 non-sacculated cases no clot-formation occurred. In one of his personal cases the ascending aorta was the seat of a diffuse aneurysm, and the innominate of a sacculated aneurysm. The latter was filled with clots, while there was no trace of them in the former. Prolonged repose and suitable diet, especially milk, create conditions favorable to the obliteration of a sacculated aneurysm, and consequently he thinks we are not justified in ascribing the obliteration of the sac to the influence of the gelatin. In a number of cases of hemorrhage from various sources hemostasis occurred after local or subcutaneous injections of gelatin. It is impossible to assert, however, that in any case the gelatin was the direct cause of the hemostasis or clot-formation, because the same effect might have followed the restricted diet and repose, and because in many cases there was no hemostatic action; because the result may have been merely a coincidence, and because no experimental proof of the coagulating action of gelatin has been offered to date. The experiences in the 48 cases show that injections of gelatin are harmless even in quite concentrated solutions. The pains sometimes caused by them are favorable on the whole, as they compel repose. Experience has also demonstrated that kidney affections are no contraindication to the administration of gelatin by the mouth. The question is still undecided in respect to subcutaneous injections.

Connection Between Diabetes and Tabes. W. Croner.—Diabetes may appear on a foundation of arteriosclerosis, and the latter is due to syphilitic infection in many cases. Affections of the pancreas with consecutive diabetes may also be explained by this association. Diabetes can also appear as a complication of tabes if the tabetic process invades the centers that preside over the sugar processes in the body.

Laryngoscopy in Children. A. Kirstein.—The autoscope devised by Kirstein merely depresses the tongue in a deep groove running to the epiglottis, which is automatically raised by the pressure. Gentle pressure on the prominence of the thyroid cartilage forces the anterior glottis well into view, and the entire throat can be inspected with remarkable ease no matter how much the child may resist. The entire larynx can be examined by this means in children of all ages, even from birth, although practice of the technique on the cadaver is an important aid. The autoscope was described in full and illustrated in the *Cbl. f. Kinderheilk*, 1899, 12, and experience is confirming its harmlessness and value.

Ziegler's Beitraege f. A. Path. (Jena), XXVIII, 3.

Transplantation of a Piece of the Colon in the Stomach. H. Reerink.—A piece of the colon, connected with its mesocolon, was transplanted into the anterior stomach wall to close a large defect, in numerous experiments on shepherd dogs. One of the animals, killed four weeks later, showed that the transplanted piece had healed perfectly into place and continued its function. Other experiments with a flap without a pedicle were less successful; the omentum became adherent to the stomach wall and the piece of intestine shrivelled and was absorbed. Experiments on the cadaver demonstrated that a large expanse of the anterior stomach wall can be substituted without technical difficulty. The transverse colon is peculiarly suitable for the purpose on account of its size. Other dogs thus operated on are still under surveillance at Freiburg to determine the remote fate of the transplanted flaps, which will be reported later.

Gazetta Degli Osp. (Milan), January 3.

Differentiating Receptacle for Gonorrheal Urine. I. Castracane.—The patient urinates directly into a flaring tube 2 cm. in diameter, holding about 300 c.c. It is bent into the shape of three Us in a row, thus automatically separating the urine into three portions, each of the same height and volume, easily inspected through the glass, which is graduated. Tests with colored fluids showed that the contents of the first loop are forced into the second and on into the third loop without blending with the following portions of fluid, although it is poured into the receptacle in a continuous stream.

Anales Del Circ. Med. Arg. (Buenos Ayres), December.

Serotherapy for Anthrax in Man. F. Dasso.—The anti-anthrax serum prepared by Mendez is much more powerful than Sclavo's or Sobernheim's. Dasso reports 130 cases treated with it, with the constant result of falling temperature, disappearance of the edema, general improvement and resolution of the ganglionary infarct. Nine of the patients died, all but two from secondary infection. The remainder of the cases all testify to the efficiency and specific character of Mendez's serum. The dose is 10 c.c., injected subcutaneously.

Antitoxin for Mosquito Bites. Voges.—Naphthalan is the substance which Voges calls an antitoxin for mosquito bites. He states that its action on the poison from the bite is as effective and specific as that of an antitoxin on the bacterial toxin. Voges is at the head of the National Department of Hygiene of the Argentine Republic.

Klinitchesky Journal (Moscow), December.

Experimental Embolism of the Coronary Arteries. A. Foxt.—The functional and anatomic alterations caused by embolism of the coronary arteries have been studied by Foxt on large dogs. He introduced minute seeds into the coronary arteries through the aorta. When the main stem of the anterior branch of the left coronary artery was completely occluded, death ensued in eight minutes from arrest of the heart, but when smaller ramifications were involved, survival for several days was possible. The obstructions in the finer branches disturbed the functioning of the neuromuscular apparatus of the heart and interfered with the establishment of collateral circulation. Marked arrhythmia and diminished systolic elevation were produced in every case and also pronounced mechanical dilatation of the cavities of the heart, especially the left ventricle, but these symptoms passed away as collateral circulation was established. There was always extravasation of blood around the occluded points and patches of anemia in the myocardium. Comparison of the results of this experimental research, and clinical experience of thrombosis and sclerosis of the coronary arteries, demonstrates that the chief cause of the disturbances in each case is the general, persisting anemia in the myocardium. The entire syndrome, subjective and objective, is the consequence of the intense disturbance of the tonicity of the muscle, resulting from this anemia, and the disturbed tonicity entails various degrees of mechanical dilatation of the different cavities of the heart. The collateral circulation that may finally be established is evidently inadequate for the maintenance, although it may sometimes prove sufficient for the regulating function of the heart under ordinary circumstances. Foxt's experiments also demonstrate a certain periodicity in the symptoms observed, which explains the fact that alterations in the coronary arteries are sometimes found at autopsies when no symptoms had been observed during life, owing to the remission of the symptoms at the time of examination.

Change of Address.

N. M. Black, 1801 Grand Ave., to 177 14th St., Milwaukee, Wis.
M. R. Bailey, 4324 Market St., to 331 South 13th St., Philadelphia, Pa.
G. E. Baxter, St. Luke's Hospital, Chicago, Ill., to Griggsville, Ill.
W. Bertrand, Rosa, La., to Cloutierville, La.
W. B. Burns, Deckerville, Ark., to Porter Bldg., Memphis, Tenn.
J. K. Castles, St. Joseph's Hospital, to Poor and Insane Asylum, Memphis, Tenn.
J. T. Caster, 817 South Cherry St., Nashville, Tenn., to California Creek, N. C.
A. Christiansen, Lock Box 602, to 510 Harrison Blvd., Wausau, Wis.
H. R. Coston, Haskell, Tex., to 2012 3rd Ave., Birmingham, Ala.
C. E. Coffin, Asylum, Neb., to Room 10, 1241 O St., Lincoln, Neb.
H. I. Davis, 3120 to 3146 Indiana Ave., Chicago, Ill.
V. W. Dunlap, Newport News, Va., to Rush Run, W. Va.
Ada Epperson, 695 Jackson Blvd., to 662 Monroe St., Chicago, Ill.
J. W. Earel, 606 W. Adams St., Chicago, Ill., to Abingdon, Ill.
E. H. Gabel, Mary Thompson Hospital, to 740 N. Park Ave., Chicago, Ill.
M. R. Gage, Biloxi, Miss., to Sparta, Wis.
Emily J. Heize, 70 State St., to 6118 Monroe Ave., Chicago, Ill.
M. M. Hixon, Continental, Ohio, to Delphos, Ohio.
Chas. [illegible], to Detroit, Mich.
F. H. [illegible], to Wood Lake, Minn.
F. Hin[illegible] and Olive Sts., to 2330 Washington Ave., St. Louis, Mo.
E. E. Holtzen, St. Louis, Mo., to Lake Creek, Mo.
J. G. Hughes, Sheboygan, Wis., to 507 Stewart Bldg., Chicago, Ill.
A. P. Harrison, Kansas City, Kan., to Arlington, Mo.
H. Johnston, Clinton, La., to Hope Villa, La.
Emma J. Keen, 1618 Glenarm St., Denver, Colo., to Fort Collins, Colo.
A. E. Klein, Elmhurst, Long Island, N. Y., to Corona, Long Island, N. Y.
C. B. King, 390 N. Clark St., to 987 Jackson Blvd., Chicago, Ill.
T. C. Lyster, asst.-surgeon, U. S. A., Havana, Cuba, to Fort Schuyler, N. Y.
T. A. Lancaster, North Manchester, Ind., to 1236 W. 23rd St., Los Angeles, Cal.
B. J. McConvill, 626 Monroe St., to 243 Ogden Ave., Chicago, Ill.
R. K. Morton, 4421 Samson St., Philadelphia, Pa., to Lead City, S. D.
C. P. Mitchell, 994 Union St., Memphis, Tenn., to Ora, Ala.
W. J. McRoberts, Jefferson City, Mo., to Edgemont, S. D.
R. H. Moore, Trenton, N. J., to 1880 Seneca St., Buffalo, N. Y.
J. W. Mulick, McIntire, Ia., to Elma, Ia.
H. P. Packard, 1638 Pennsylvania Ave., to 1221 California Ave., Denver, Colo.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 7 to 13, 1901, inclusive.

George W. Adair, major and surgeon, U. S. A., member of a board at Fort Sheridan, Ill., to examine enlisted men for promotion.

Max A. Becher, acting asst.-surgeon, from Los Angeles to San Francisco, Cal., to accompany troops to Manila, P. I., and for subsequent assignment in the Division of the [illegible]

William H. Corbusier, major and surgeon, [illegible] board at Governor's Island, N. Y., to examine [illegible] mended for commissions.

William D. Crosby, captain and asst.-surgeon, U. S. A., as Corbusier above.

Guy L. Edie, major and surgeon, Vols., relieved from further duty in the Division of the Philipines and assigned to temporary duty in the Department of California.

Louis T. Hess, lieutenant and asst.-surgeon, U. S. A., member of a board at San Francisco, Cal., to examine enlisted men for promotion.

John Van R. Hoff, major and surgeon, U. S. A., member of a retir[illegible] D. C.

J[illegible]rgeon, U. S. A., from Chicago, Ill., to [illegible]port to the Surgeon-General for instructions.

James C. Merrill, major and surgeon, U. S. A., member of a retiring board in Washington, D. C.

Robert W. Morgan, dental surgeon, U. S. A., from Lynchburg, Va., to report at Washington, D. C., to the Surgeon-General for instructions.

Edward R. Morris, captain and asst.-surgeon, U. S. A., in addition to his present duties, to act as examiner of recruits at the city of Detroit, Mich.

Edward L. Munson, captain and asst.-surgeon, U. S. A., leave of absence granted on account of sickness.

Robert T. Oliver, dental surgeon, U. S. A., from Indianapolis, Ind., to Washington, D. C., to report to the Surgeon-General for instructions.

William E. Purviance, captain and asst.-surgeon, U. S. A., member of a board at San Francisco, Cal., to examine enlisted men for promotion.

Charles Richard, major and surgeon, U. S. A., member of a board at Fort Leavenworth, Kan., to examine enlisted men for promotion.

Samuel S. Turner, acting asst.-surgeon, member of a board at Fort Sheridan, Ill., to examine enlisted men for promotion.

Robert Winn, acting asst.-surgeon, member of board at Fort Leavenworth, Kan., to examine enlisted men [illegible]

In addition to the above the following [illegible]ers were appointed to membership on boards to [illegible] 1, 1901, at the stations designated, for the mental and physical examination of such candidates for the Military Academy as may be authorized to appear before them; Major John M. Banister, surgeon, U. S. A., and Lieut. Franklin M. Kemp, asst.-surgeon, U. S. A., at West Point, N. Y.; Acting Asst.-Surgeon John S. Fogg, at Fort McHenry, Md.; Maj. William O. Owen, surgeon, U. S. A., at Fort Thomas, Ky.; Capt. Harry M. Hallock, asst.-surgeon, U. S. A., at Fort McPherson, Ga.; Maj. Aaron H. Appel, surgeon, U. S. A., at Jackson Barracks, La.; Maj. Charles B. Byrne, surgeon, U. S. A., at Fort Sam [illegible] Henry I. Raymond, asst.-surgeon, U. S. A., [illegible] Maj. Marshall W. Wood, surgeon, U. S. A., [illegible] Mo.; Maj. Charles Richard, surgeon, U. S. A., at Fort Leavenworth, Kan.; Capt. Alfred E. Bradley, asst.-surgeon, U. S. A., at Fort Snelling, Minn.; Lieut.-Col. Henry Lippincott, deputy surgeon-general, U. S. A., at Fort Logan, Colo.; Acting Asst.-Surgeon Carle E. Bentley, at Fort Logan H. Roots, Ark.; Maj. John D. Hall, surgeon, U. S. A., at the Presidio of San Francisco, Cal., and Maj. Louis S. Tesson, surgeon, U. S. A., at Vancouver Barracks, Wash.

Special Order, No. 218, Headquarters Division of the Philippines, Manila, P. I., Dec. 21, 1900, reads as follows: Upon recommendation of the chief surgeon of the Division, the following named acting asst.-surgeons, U. S. A., are authorized to proceed to Manila and report to the president of the army medical board constituted by *paragraph 12, Special Order, No. 15, current series, headquarters* of the army, for examination for appointment as asst.-surgeons, U. S. A., and upon completion thereof will return to their proper stations, the travel expenses involved to be defrayed by applicants under paragraph 1395 of the Regulations: Department of Northern Luzon, George M. Ekwurzel, Isador M. Unger, Ernest F. Slater, Lorin B. Ohlinger, James F. Edwards and U. S. Grant Deaton; Department of Southern Luzon, Frank T. Woodbury and Wilmont E. Brown; Department of the Visayas, Paul R. Fletcher. Applicants, before leaving their stations, will file with the chief surgeon of their respective departments, by telegraph if practicable, a certificate that they intend to appear before the board on arrival at Manila.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ending Feb. 16, 1901:

P. A. Surgeon C. P. Bagg, detached from the Cavite Naval Station and ordered to the *Culgoa*.

P. A. Surgeon A. R. Alfred, detached from the *Culgoa* and ordered to the Naval Station, Cavite, February 7.

Surgeon C. Biddle, detached from the Naval Hospital, Norfolk, Va., and ordered home to wait orders.

Surgeon D. O. Lewis, detached from the *Iowa* and ordered to the [illegible] ry 13.

[illegible] rnold, detached from duty at the Naval Re- [illegible] Chicago, Ill., March 1, and ordered to the [illegible] for Manila, March 15.

[illegible] flith, detached from the *Prairie*, when put out of commission, and ordered to duty under the Bureau of Medicine *and Surgery.*

Surgeon F. J. B. Cordeiro, detached from the *New Orleans* and ordered home and to wait orders.

Surgeon A. M. Moore, retired, ordered to duty at Naval Recruiting Rendezvous, Chicago, Ill., March 1.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S Marine-Hospital Service for the seven days ended Feb. 14, 1901:

Surgeon H. W. Sawtelle, granted leave of absence for thirty days from February 20.

Surgeon P. C. Kalloch, granted leave of absence for three days from February 17.

P. A. Surgeon H. D. Geddings, granted leave of absence on account of sickness for eight days from January 26; granted leave of absence for thirty days from February 3.

P. A. Surgeon C. H. Gardner, granted leave of absence for seven days.

Asst.-Surgeon H. B. Parker, to proceed to Gulf Quarantine and assume temporary command of the service during the absence on leave of the medical officer.

Asst.-Surgeon *Dunlop Moore, to proceed to Port Townsend,* Wash., and assume temporary command of the service during the absence on leave of the medical officer in command.

Asst.-Surgeon G. W. McCoy, granted leave of absence for fourteen days from March 18.

Health Reports.

SMALLPOX—UNITED STATES.

California: Oakland, Jan. 12-26, 4 cases.
Florida: [illegible] 2-9, 2 cases.
Georgia: [illegible] 7, 2 cases.
Illinois: [illegible] 9, 8 cases; Chicago, Feb. 2-9, 2 *cases;* Pulask. [illegible] 5 cases.
Iowa: Ottumwa, Jan. 5-26, 2 cases.
Kansas: Lawrence, Feb. 2-9, 3 cases; Wichita, Feb. 2-9, 9 cases.
Kentucky: Lexington, Feb. 2-9, 1 case.
Louisiana: New Orleans, Jan. 2-9, 14 cases, 4 deaths.
Minnesota: Minneapolis, Jan. 26-Feb. 9, 9 cases.
Mississippi: Vicksburg, Feb. 2-9, 4 cases, 2 deaths.
Nebraska: Omaha, Feb. 2-9, 8 cases.
New Hampshire: Manchester, Feb. 2-9, 26 cases.
New York: New York, Feb. 2-9, 17 cases, 6 deaths.
[illegible] 2-9, 2 cases; Cleveland, Feb. 2-9, 48 cases [illegible] 2-9, 1 case.
[illegible] Feb. 2-9, 5 cases.
Tennessee: Memphis, Feb. 2-9, 16 cases; Nashville, Feb. 2-9, 9 cases.
Utah: Salt Lake City, Feb. 2-9, 32 cases.

[illegible] AND INSULAR.

Austria: P [illegible] 7 cases.
China: Ho [illegible] case.
Ecuador: Guayaquil, Nov. 24-Jan. 5, 25 deaths.
Egypt: Cairo, Jan. 1-7, 1 death.
England: London, Jan. 19-26, 3 cases; Newcastle on Tyne, Jan. 19-26, 5 cases.
France: Paris, Jan. 12-19, 6 deaths.
India: Bombay, Jan. 1-15, 6 deaths; Calcutta, Dec. 29-Jan. 5, 96 deaths; Karachi, Dec. 23-Jan. 6, 7 cases, 3 deaths; Madras, Dec. 15-Jan. 4, 3 deaths.
Mexico: Merida, Dec. 20, 1900, epidemic; Tuxpan, Jan. 28-Feb. 4, 3 deaths.
Porto Rico: Ponce, Feb. 8, 22 cases.
Russia: [illegible] 12-19, 4 cases; Odessa, Jan. 12-19, 31 cases, 5 death [illegible] 5-19, 6 cases, 2 deaths.
Scotland: [illegible] 1, 180 *cases.*

CHOLERA.

India: Bombay, Jan. 1-15, 9 *deaths;* Calcutta, Dec. 29-Jan. 5, 31 deaths; Madras, Dec. 15-Jan. 4, 19 deaths.

PLAGUE.

China: Hongkong, Dec. 29-Jan. 5, 2 cases, 2 deaths.
England: Hull, Jan. 30, 2 deaths, crew of steamship *Friary.*
Wales: Cardiff, Feb. 8, 1 death.
India: Bombay, Jan. 1-15, 550 deaths; Calcutta, Dec. 29-Jan. 5, 28 deaths.

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The Journal of the
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Original Articles.

SANITATION AND PROGRESS.*

WALTER WYMAN, M.D.
SURGEON-GENERAL, U. S. MARINE-HOSPITAL SERVICE.
WASHINGTON, D. C.

Some four years ago, at the meeting of this Congress in the City of Mexico, I had the honor of addressing you upon the subject of "International Responsibility with Regard to Epidemic Diseases." Quite in line with the thoughts then expressed, I have chosen for my subject to-night "Sanitation and Progress," and it will be my effort to show the interdependence of municipal, national, and international effort in the great undertaking of the elimination of contagious disease, and that the twentieth century should witness this achievement.

Each morning I open on my official desk a package of newspaper clippings, containing notices of the prevalence of the several contagious diseases throughout the whole United States; and, as I note the varying recurrence of smallpox, diphtheria, typhoid fever, and scarlet fever, the notes upon consumption, the alarms concerning yellow fever and the bubonic plague, the thought which is impressed upon me is how seriously are we lacking in proper effort in suppressing these suppressible diseases. Nothing seems easier to me than the prevention or suppression of smallpox. In vaccination we have an absolute preventive, and in the glycerinized lymph we have a safe inoculating material absolutely devoid of the danger of exciting undue inflammation. Thus a mere scratch or a needle puncture insures, without discomfort, protection from one of the most loathsome and disfiguring diseases known. Even after smallpox has become epidemic, the methods by which it may be rapidly and surely suppressed have been so frequently demonstrated as to become now almost a matter of mere routine.

The antitoxin for diphtheria has long passed the experimental stage and is now justly regarded as a specific—a trusty addition to the armamentarium of the physician and sanitarian.

In the treatment of the other diseases mentioned, we have for bubonic plague a specific cure and preventive, and are certainly on the verge of the discovery of specific remedies for both tuberculosis and typhoid fever, but even without these specific remedies the nature of the diseases are thoroughly understood and the methods of the prevention of their spread are accurate and well known.

Then why do these diseases persist? The answer is plain. It is that sanitary administration has not kept pace with scientific knowledge. It is also evident that this scientific knowledge is not so widely diffused as it should be, even among those of whom we have a right to expect it. It is evident that we are not making "use of those means which the God of Nature has placed in our power."

MUNICIPAL SANITATION.

With regard to cities, there is a marked necessity of a strong public sentiment requiring that municipal cleanliness shall rank as one of the foremost features of municipal government. This is a field, not for the national government, but distinctively for the states and municipalities, whose degree of sanitary excellence is a fair exponent of their civilization and culture, for each state and each municipality has, and will continue to have, a degree of sanitary excellence commensurate only with the demands of its own people.

We have here a striking illustration of the fact that our governments are governments of the people. It is, therefore, necessary to cultivate among the people a demand for municipal sanitary excellence and as great an abhorence of municipal filth or neglect of sanitary engineering as there is of uncleanly dwellings or of uncleanliness of person.

A good water-supply, perfect sewerage and disposal of garbage, good street paving and street cleaning, should be the first boast of every municipality. Let these be pointed to with the pride which is commonly bestowed upon great public institutions and buildings. I see no reason why slums should be allowed in any city. Relatively speaking, too much attention is paid to public parks and handsome municipal buildings. The city's improvements should be in the alleys, around the docks, in the tenement-house quarters, and great as may be the appreciation of public art as manifested by statues and public gardens, and of the parks and the boulevards, let these wait upon the less showy but more important features of municipal life.

Recently I was on a board of three, the other two members being noted architects, to decide upon plans for the great government hospital for the insane, near Washington, Congress having appropriated $1,000,000 for doubling the capacity of the present institution. In looking over the numerous plans and sketches submitted by the half-dozen competitors, I was impressed with the promptness with which these two noted architects pounced upon all faults relating to light and ventilation, particularly of the lavatories, quickly throwing out as unworthy of further consideration those plans which placed the toilet-rooms in dark or badly ventilated positions. This illustrates the advanced modern idea, particularly when you reflect that formerly any dark or out-of-the-way place was considered proper for these necessities of habitation. So, too, in practical hospital work, it has been my observation that dark closets are wont to be the repositories for old mops, rags, and dirt, so that it was my rule, when engaged in the management of hospitals, to paint the darkest and worst closets a pure white, making immediately perceptible the slightest trace of dirt or filth. The trouble I had experienced with these closets soon vanished.

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* Read before the Third Pan-American Medical Congress, held in Havana, Cuba, Feb. 4-7, 1901.

These illustrations will serve with regard to cities. The chief attention should be centered upon the worst parts of the city. The sewerage, paving, light and ventilation of the worst sections should receive the first and most constant attention. In support of this idea, I quote from an article written five years ago by Dr. John S. Billings, who says:

> As regards Asiatic Cholera, typhoid fever, various forms of diarrheal and dysenteric diseases, and diphtheria, our knowledge of their causes, means of communication and prevention is much in advance of the actual practice of most communities, mainly because the methods which are known to be effective to secure constantly pure water supplies and the satisfactory removal and disposal of refuse and excreta require considerable sums of money to establish and to maintain, and the public has not yet arrived at the conclusion that such expenditure is wise and proper and that taxation for such purposes is necessary to secure the prosperity of a community.
>
> A very considerable part of the excess of death rates in a city is due to the poverty of the inhabitants of certain sections of it. In certain parts of all large cities there are to be found a number of people who are insufficiently fed and clothed and who are huddled together in such a way that cleanliness, decency and morality are difficult or impossible to obtain. Here congregate the idle and intemperate, the tramps and loafers of the country, the hereditarily indolent and vicious classes. Mingled with them and living under much the same conditions are many honest and industrious people who are living from hand to mouth; the daily wage earners to whom sickness means recourse to the public hospitals and loss of means to earn their own subsistence. The death rates in these quarters are fifty to one hundred and fifty per cent. greater than those of the better class of population; the average duration of life is from ten to fifteen years less by reason of such poverty and squalor, a large part of their sickness must be relieved by public charity and one-third of those who die among them must be buried at public expense.
>
> The problem of how to improve the sanitary condition of these quarters to prevent the increase of foul, damp, dark and overcrowded dwellings and thus lessen the burden of the community, without still further pauperizing the people and attracting to the place other vagrants and criminals, is one of the most serious that confronts modern civilization and municipal government.
>
> It is easy to prove to any intelligent business man that high death and sickness rates in a city imply heavy demands on the public purse in the maintenance of hospitals and other charities, and also to show that an abundant and pure water supply, clean streets, good sewerage and good and well enforced building regulations are among the best means of lowering these death and sickness rates.

WRONG METHODS.

The foregoing quotation suggests a conviction which has long been forced upon my mind, that in all our sanitary work, both in municipal sanitation and in quarantine, we are working at the wrong end of the line. We are treating symptoms instead of the original cause of the disease, and both for sociologic and economic considerations it would be far better to change the point of our attack.

Let me illustrate by the quarantine methods heretofore in vogue, those now and in the future to be utilized in the suppression of an epidemic disease such as yellow fever. When yellow fever appeared in a given locality under the old dispensation, shotgun quarantines were established by near and remote localities having any possible communication therewith. The press dispatches announced that "Podunk," evidently priding itself on its vigilance, "has quarantined against the world," and other communities, not to be outdone by Podunk, followed suit. I do not mean to ridicule these measures, but how much wiser is the method now enforced of concentrating the restrictive efforts in the neighborhood of the epidemic, and how much wiser still will be those provisions of the near future which will enable any community, by reason of its good sanitary condition, to look with comparative equanimity upon the chance introduction or outbreak of a contagious disease.

And in our municipalities we build large public hospitals and establish other charitable institutions for the reception of the people whose unfortunate condition is attributable in a large measure to the insanitary conditions which our municipal governments allow to persist. As an economic measure, therefore, as shown by Dr. Billings, it will in the long run be profitable to spend more upon sanitation; and from a sociologic standpoint the advantages of this policy will be no less marked, for it must have occurred to most of my hearers in their hospital experiences that the greater the number of charity hospitals that are founded the greater will be the number of people who are willing to become the recipients of charity; and that while charity is to be commended the zeal manifested therefor may, after all, bring unfortunate results, for "zeal without judgment is a fault, even though it be zeal unto good."

SANITATION VERSUS QUARANTINE.

Another strong appeal for sanitation lies in the promise which it would give of getting rid of quarantine. The time is at hand when we must consider the necessity of ridding ourselves of these restraints upon commerce, of holding a ship with its valuable cargo and eager passengers, in quarantine because some person is aboard who has resided in a filthy section of a foreign port and has brought with him an infectious disease. For these diseases can generally be traced to the overcrowded and otherwise insanitary sections of a city, the sections which, as I have before stated, should receive our first consideration. And the rich man held on board a steamer in the upper cabin because of infection aboard his ship in the steerage may reflect that his detention is due primarily to the faulty sanitation of some miserable portion of some foreign city, and he receives thereby a demonstration of his personal interest in these conditions.

It is an interesting matter for conjecture—what would be the effect upon the prevalence of contagious disease if there could be a complete wiping out of all slums and low tenement-house districts in all our cities. It matters not that an epidemic once started may prevail as violently, or more violently, in the better portions of a city, and that cleanliness and sanitation may then have but little effect upon its progress. The fact remains that for the perpetuation of these diseases among the people filth and bad environments are essential, and when we reflect how easy and natural is the upward gradation of infection, how readily through successive grades it may ascend the social scale from the lowest to the highest, the direct and personal interest of the wealthy and more intelligent classes of a community in the condition of the poor and ignorant becomes manifest. The greater danger of contagious disease among the poor is recognized in the present U. S. Treasury quarantine regulations, providing for the inspection of vessels at foreign ports bound for the United States. These regulations require, under certain circumstances, the inspection of the steerage but not of the cabin passengers. We have made a class distinction, notwithstanding our democratic ideas, but the regulation is based on knowledge. It is a recognition of the fact that contagious and loathsome diseases are more apt to be prevalent among the poor, not simply because they are poor but because they have been crowded and prevented from living under as good sanitary conditions as the more favored classes.

That good sanitary environment, enhancing the general health, is the best means of eliminating contagious disease, is illustrated by a conversation which I have had within a week with the director of the Hygienic Laboratory of the U. S. Marine-Hospital Service, Dr. Rosenau, who has just returned, after a prolonged period of study and investigation in the Pasteur Institute in Paris. On inquiring as to the latest phases of scientific investigation and the trend of thought at this great intellectual center, among other matters, he stated that there seems to have arrived a period of pause in bacteriology, or at least a spirit of inquiry as to the true relation of microbes to the diseases of which they have been considered the special agents. Dr. Rosenau's statement is as follows:

VIEWS ON ORIGIN OF CONTAGION.

> We have lately been compelled to modify some of our notions of the causes of contagious and infectious diseases. After the brilliant discoveries by Pasteur and Koch it was thought that the presence of the pathogenic microbe organism was like the bite of a venomous snake, surely poisonous. But now we know that there are other conditions besides the presence of the microbe necessary to produce disease. Many people go about with virulent diplococci of pneumonia in their respiratory tract but do not have pneumonia. Why? Because their cells are vigorous enough to prevent the diplococci invading the lungs, but put such a person under bad sanitary conditions or depress his vitality and the microbes are not phagocyted—they invade the lungs and pneumonia and death follow.
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> The same, to a limited degree, occurs with the bacillus diphtheriæ.
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> In times of cholera epidemics men go about with living, virulent, cholera vibrio in their intestinal canal, yet they are not sick. Why? Because the conditions for the production of the cholera toxins are not favorable—there is no abnormal flora in their intestinal canal. But let such a person eat poor and tainted food or derange his digestion through indiscretion or evil sanitary surroundings and the disease results.
>
> Many people live a long and active life with tubercle bacilli encysted in the apex of one lung. As long as they have plenty of fresh air and sunshine and good sanitary surroundings they remain well. But give such a person poor food or bad sanitary surroundings and see what happens. The battle going on between the bacilli and the cells results in a victory for the bacilli. The cells die and the victorious bacilli spread havoc through the lungs. We, therefore, have a scientific proof of the sense of the old-time notions of the old-fashioned doctors who taught the value of fresh air and sunshine, of good food and exercise, of cleanliness and dry dwellings, and we find that the conditions of health which result from such good sanitary conditions are after all among the very best preventives against infection.

Another good effect of sanitary excellence would be to obviate municipal deception either in the concealment of the existence of contagious disease or by reports giving a sense of false security to other communities. This subject is one which time will not permit me to discuss, but was treated of at some length in an address which I had the honor of delivering before the Social Science Association, in Washington, D. C., last May. I will simply say that the greater the neglect of sanitation, the more pronounced the disease-bearing factors of a city, the more sensitive does it seem to the acknowledgment of the presence of contagion, the more determined does it become in outright denial. It is thus seen, and it is by no means a matter of imagination, that municipal morality is affected by the municipal sanitary status.

WHO SHOULD BE SANITARIANS.

In the sanitary progress of the new century, it has occurred to me, there must be developed new classes of individuals in sanitary affairs. To-day every physician is considered, in a sense, a sanitarian; then there are the professional sanitarians, represented chiefly by those holding sanitary office; but there are very few men to-day engaged in legislation who give any thought to sanitary legislation. We need a classs of men who are versed in the law, who are skilled in framing laws, and who are familiar with the difficulties and methods of securing their enactment. The average doctor or sanitarian is as a child in these matters. Impressed with the importance and nobility of his cause he becomes oblivious to the sentiments or even the rights of those affected unfavorably thereby. The same influences which seem to make of the doctor a poor man of business seem to make of the average sanitarian a poor man for legislation. So that it seems to me, at least in the United States, it will be necessary in the development of the ideal sanitary legislator to look for him among the lawyers rather than among the physicians. There is no reason why a good lawyer should not become an adept in sanitation. I believe it to be more difficult for a good doctor to acquire legislative wisdom.

Another class of men whom we should look to for aid are the men of extreme wealth. I believe their attention should be directed to the vast amount of good to be done by the employment of their capital in backing up sanitary improvements. The number of great fortunes possessed by individuals in our several republics, I have not had the opportunity of learning, but they are numerous; and so far as I can judge, their possessors, at least a large number of them, are imbued with generosity and a desire to utilize their great wealth for the public good. Witness the large number of universities founded by wealthy men, the public libraries, and other institutions, erected or endowed by them; the contributions which they make in times of great calamity and in ordinary times to all charitable undertakings.

The methods by which they may assist in public sanitation may not be so obvious or numerous as other methods of advancing the public welfare, yet the influence of a man of great wealth could be distinctly felt in the advancement of sanitary legislation, and in the perfection of sanitary administration. Moreover, the use of large capital in the improvement of the dwellings of the poor appears to me to be as sensible and noble a method of the employment of capital as can be found. It has been a matter of surprise to me that the attention of our wealthy men of philanthropic impulses has not been more frequently thus directed. The Mills Buildings in New York City in a measure illustrate this idea, and I doubt not that a proper inquiry into the subject would develop other illustrations. But the advantage which individual capital enjoys over municipal government in the improvement of the dwellings of the poor lies in the difficulty experienced by the latter in condemning and destroying unsuitable tenements. Capital can purchase them and erect good buildings in their stead. This is illustrated by the history of a company formed, and now being successfully operated in Washington, D. C., for the erection of suitable habitations for the poor, with less thought of profit than of public benefaction. As originally outlined, the scheme included a condemnation by the commissioners of the District of Columbia and a destruction of the condemned insanitary buildings and the erection in their place of buildings by the company, though owing to legal difficulties the necessary legislation for destruction has not yet been enacted.

In a recent press clipping I have read that statistics just compiled show that during the year just past contributions to educational, religious and charitable objects and institutions in the United States have amounted to almost $61,000,000, donations of less than $1000 not being included in this summary. The article further states that this showing seems to indicate that there is a growing disposition to make philanthropy a partner of prosperity, a tendency to give helpfully instead of pauperizing men by benefactions. But in the list of these benefactions I see no mention of purely sanitary gifts or endowments, and to my mind it seems a reasonable proposition that more practical and beneficial results would have been obtained if this $61,000,000, instead of being expended upon educational, religious and charitable institutions had been expended upon reclaiming the slums, and in the purchase and destruction of rookeries, with the erection in their stead of modern sanitary tenement-houses, and that, too, even though the money had not been expended outright as a gift, but as a safe though moderately paying investment.

SANITARY TENEMENTS.

The need of sanitary tenements has been brought to the front by the recent agitation and widespread movement for the suppression of tuberculosis. In a pamphlet on the tenements and tuberculosis, by Dr. S. A. Knopf, of New York City, appears the following statement: "The present condition of the tenement houses in this city is so serious that the evils arising therefrom are a distinct menace to the welfare of the community. There are at present over 44,000 tenement houses in the old City of New York, and new tenement houses are being erected at the rate of about 2000 a year. These are, in many respects, worse than the old buildings erected thirty years ago. They are badly constructed, and so planned that many rooms depend for their light and air upon long, narrow, dark, air-shafts, which, instead of giving light and air, are merely stagnant wells emitting foul odors and diseases."

It is true that restrictive legislation may be enacted, but in view of all the foregoing facts can there be found a more useful method of employing great individual wealth than in the removal and the prevention of the erection of such houses by the substitution of those properly constructed.

In a recently published article by Charles R. Henderson, Professor of Sociology in the University of Chicago, on the spirit of modern philanthropy, the writer states that "philanthropy has taken a wider and nobler view of its mission. It has become preventive and educational." He quotes Miss Carpenter, as follows: "A hospital can not cleanse a poison-infected district, nor diminish the constant supply of patients from an undrained and malarious locality." He further says: "It is well to remove the weak and tempted from bad environment, better still to improve the environment. It is well to go down to the folk-swamp and rescue one here and there; better still to drain the cesspool, improve the tenements, prevent adulteration of food and drink, inspect factories and compel use of devices for averting accident and disease. The wall at the top of the dangerous precipice is worth far more than an ambulance at the bottom.

Since the above lines were written I have read a letter from a special correspondent (Marshal Lord) of the Washington *Evening Star*, of January 19, showing the reformatory work of this character now going on in London, which should certainly stimulate all American municipalities to efforts in the same direction. The writer states that:

> Every American city big enough to have one of those municipal sores called a slum will doubtless be interested in the huge experiment London is undertaking. This is nothing less than the expenditure of ten millions of dollars in the wiping out and rebuilding the homes of about forty thousand people. A further program that means the expenditure of another ten millions is now being discussed, and, after these projects are well under way, new schemes will be planned to the same end and more millions spent until the necessity for spending money in this way in London shall have disappeared and the city have become a landlord on an unprecedented scale. To-day the housing problem is the worst that London has to face, but her powerful county council, which has done several rather remarkable things already, and which has practically unlimited wealth to draw upon, has determined that overcrowded, insanitary, and slum areas must go. The County Council has already attacked, razed and rebuilt one of the worst slums in London. Several other notorious ones are now being torn down and still others are doomed. Medical inspectors in the County Council's employ are penetrating into the city's filthiest corners and condemning them. The wretched creatures who swarm in them are paid a small sum of money and turned out, after which the slum comes down. The "before taking" phase of the Council's heroic remedy is a mass of closely packed hovels, squalid, unlighted and unventilated, reached through grimy, winding alleys, in which the police dare to go only in force. The "after taking" is blocks of trim cottages or apartment buildings, each separated from the other, equipped with literally every modern convenience, including a perfect system of drainage and every essential for cooking. The apartments are well lighted by day with large windows; at night either by gas or electricity on the slot system where a penny dropped in produces gas for six hours. These model dwellings, moreover, are to rent at prices which even very poor people can afford to pay and are immediately tenanted to their full extent.
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> So far, on workingmen's homes of this pattern that occupy the place of former slum districts, the London County Council has spent a little over $3,000,000. It is now building houses which will cost over $1.500,000, and to clear the new districts, which have been condemned and which are to be rebuilt, will cost $5,500,000 more. The houses already built accommodate more than ten thousand people. Those now building and those arranged for will give dwellings to thirty thousand more. They will be finished and occupied in five years from now.
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> The second scheme which the Council is laying out takes another way of curing the same disease of overcrowding. This is by acquiring tracts of land in the country just out of London, building model dwellings there and connecting them with the working centers of the city by light railways. This will probably cost $10,000,000 more.
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> The Council began to rehouse on a modest scale in 1883, but the importance of its work to-day lies in the dimensions to which it has grown and its great promise for the future.

It is a significant fact, happily recalled at the present time, that the new King of England, Edward VII, was identified with the inception of this work. His maiden speech in the House of Lords in 1884 was in support of a motion in favor of the better housing of the poor, and he was subsequently one of the commission appointed to consider the matter.

It is thus seen that our brethren in the East are already in the field. Why stand we here idle? Shall we in our newer territory allow ourselves to be surpassed in these matters by older governments, less democratic than our own, less dependent upon the will of the people?

In the foregoing I have endeavored to show that public sentiment, law and administration are the most important factors for the attainment of our standard of sanitation.

ADMINISTRATION.

One more word with regard to administration. The health officers selected under state or municipal law are too frequently subject to political change. An experience of one term of service is generally necessary to sufficiently acquaint the health officer with the duties of his office, and while political changes in other offices may be made, possibly without injury to the public service, the same can not be said with regard to an officer of the public health. He should be selected, also, solely on account of his ability or special adaptability for the position, and while every American citizen may be expected to be a politician, in a certain sense the health officer should be one who is not devoted to politics. And here is where the great body of the medical profession can exercise a salutary influence by taking an active interest in these appointments, insisting that men of character, of education and reputation, should receive them, for it is the duty of the profession to uphold the health officer in the performance of his public obligations. The health officer and the boards of health should command the respect and receive the support of the practitioners of medicine whose influence in this direction is all powerful.

SANITATION AND POLITICS.

One word at this point with regard to sanitation and politics. The city of Washington is sometimes referred to as typifying the highest order of sanitary equipment and administration, and when it has completed its sewerage system and established its water filtration plant it will be a model city. But, it may be argued, it is a model city because, unlike others, it has no local politics. This is true, but if municipal politics seem to interfere, as they often do, with sanitary progress, it but serves to demonstrate a reason, in addition to many other reasons, why the best men should go into politics.

In the beginning of this paper I stated that municipal cleanliness and sanitation is not a field for the national government, but belongs distinctively to the states and municipalities. Doubtless there is suggested to you, as to myself frequently, the thought of the national government enforcing municipal sanitation. Speaking for the United States, under our constitution, it is impossible. Nor with our ideas of self-government is it desirable. A weak leaning upon the national government in ordinary matters affecting the people of a state or city is a thing to be avoided as lessening the feeling of municipal and personal responsibility for good government. The general government does not go into cities and say what kind of reservoirs they must have, how their sewers shall be laid and what disposal is made of their garbage. These are left to local governments, which are just as capable for these measures as they are for managing their own police and fire departments.

Yet in the exercise by the general government of its right to prevent the introduction of contagious diseases from foreign countries, or the spread of these from one state to another, I can foresee the possibility of such national action as may, without objection, have an influence on the sanitation of cities. The sanitation of seaport cities which habitually breed yellow fever, with a view to eliminating this disease, which interferes so seriously with commerce, is being seriously considered by thoughtful men interested in commerce, sanitation and diplomacy.

COMMERCIAL INTEREST IN SANITATION.

There is no one disease which interferes so seriously with commerce in the western hemisphere or causes greater panic than yellow fever. The interdependence among nations in the efforts to get rid of this disease has become strikingly obvious, and illustrates the unity of interests of the nations in sanitation.

Sanitation in Western Republics.—An inquiry into the sanitary conditions in the ports of the western republics will show, with regard to many of them, a woful sanitary condition, a neglect of the first principles of sanitation, and either faulty or entire absence of quarantine protection of one city from another. The commercial relations between these places are each year becoming more intimate, and through correspondence and conversation with representatives of the Central and South American republics, I learn that the same apprehension which is felt by the United States each summer is experienced by all. All, or nearly all, of our republics have suffered in their commercial and business prosperity through the visitation or threatened visitation of yellow fever, and I have been surprised by the instant approbation with which all with whom I have spoken received the idea of an international agreement looking to the sanitation of such seaports as are habitually infected with yellow fever. That yellow fever can be rooted out of an old endemic focus, I believe; but to demonstrate it is not an easy matter. I have endeavored within the past two years, through special reports from the United States consuls, to collect facts showing the relation between sanitary improvements and the prevalence of yellow fever in the principal fever ports of the tropics, but the results are as yet undeterminate. I believe, however, we have one notable illustration of success in Santiago, long known as a yellow fever port, but where the measures adopted by General Wood and the medical officers of the army were so radical and thorough that no yellow fever now prevails or has prevailed during the past year in that city. I feel confident, too, that in due course of time, and that before long, yellow fever will be made to disappear altogether from Havana. Reasoning somewhat by analogy, we should be able to exterminate yellow fever from a given locality. A year ago last July it appeared in the National Soldiers' Home, Hampton, Va., where there were 3500 veterans of the Civil War, but it was stopped, and that, too, quickly, with a record of forty-five cases and thirteen deaths. In June, 1896, it appeared at McHenry, Miss., and in twenty days was entirely suppressed, after the occurrence of twenty cases in all.

PROVISIONS IN ELIMINATING YELLOW FEVER.

In eliminating it, however, from a city or locality where it has prevailed for many years, there are four provisions which must be complied with: 1. Effective sanitary administration. 2. Good sewerage and water-supply, soil drainage and paving. 3. Sanitary engineering of harbors. 4. The destruction or scientific disinfection of houses where the fever has prevailed. In Havana the first of these requisites has been and is being accomplished. The city is clean on the surface. The sanitary administration is excellent, and measures are already under way for securing the second requisite of good sewerage, drainage and paving. I do not know that it has yet been determined whether sanitary engineering is necessary with regard to Havana harbor. But any harbor in the tropics which receives sewage, and is so land-locked that it becomes a cul-de-sac, must be subjected to such engineering as will cause a flow of its waters freely to the sea. But even when all this is done, yellow fever will still prevail unless the fourth measure is enforced, namely, the destruction of old infected houses and the thorough scientific disinfection of others too good to be destroyed. In a tropical city a few years ago, much stress was laid on the good results following sanitary improvements of the harbor, but their improvements went still further, namely, to tearing down a large number of old houses, which was immediately followed by an unusual outbreak of yellow fever. In other cities, I have been informed, millions of dollars have been spent in improving the sanitary conditions, yet yellow fever prevails from time to time, and why? Because the houses are infected, and have been for a great number of years.

MEANS OF DISINFECTION.

This brings to us the question: Have we a simple and efficient means for a scientific disinfection on this broad scale? I believe that we have. To the U. S. Marine-Hospital Service, which has had so large an experience in the post-epidemic disinfection of cities and towns, the thought of a simple, clean, non-injurious, inexpensive, yet thorough disinfection of houses, after its experience with the carting around of steam chambers, the burning of sulphur, and washing down with bichlorid solution and carbolic acid, and meeting the bills afterward presented for ruin or damage of property—the thought comes as a welcome relief.

A few years ago, through the inventive genius of one of our officers, we believed we had a formaldehyde lamp which met every requirement, but experience demonstrated certain defects which caused its temporary abandonment. The intelligent mechanic who constructed the lamp, however, has so improved it that thus far it has stood every scientific and practical test to which it has been put, and I hope and believe that in this lamp we have an efficient, simple and safe method of evolving formaldehyde gas of a strength to insure a thorough disinfection of houses and public buildings. I mention this matter as one of encouragement in the idea of eliminating yellow fever under the terms of the fourth requisite mentioned, from cities usually infected.

INTERNATIONAL AGREEMENT IN SANITATION.

The plan of international agreement which was outlined in an article by myself,[1] contemplates a convention to be composed of public sanitarians, civil engineers and financiers, whose duty it should be to prepare a treaty providing for the examination of the chief yellow fever ports by a commission representing the republics concerned. Each country should obligate itself to put into effect the measures recommended by this commission, or measures of its own which should meet with the commission's approval. Since obligations without penalties would be worthless, the treaty should provide that if after a sufficient time these improvements are not made, each of the other nations interested should impose such discriminative tariff or tonnage tax or quarantine restraint upon the offending nation as would cause it in its own interests to comply with the terms of the treaty. Since the publication of the *Forum* article, I have conversed upon the subject with a number of the representatives of the Central and South American republics, and with representative public men of our own country, and without exception all have pronounced the idea both valuable and practical.[2] If this measure should become an accomplished fact, think of the stimulation which, through international influence, would be given to municipal sanitation everywhere. Dr. Kober, in his excellent address on the "Progress and Achievements of Hygiene," gives in detail the beneficial results of the sanitation of European cities. In providing for sanitation of seaports on account of yellow fever, the cities would undoubtedly benefit with regard to other diseases, and there is no doubt that as a result their commercial prosperity would be so enhanced that other cities would take notice and profit by their example.

Standing on the threshold of the twentieth century, and looking forward to its achievements, the foregoing thoughts appear to lose the elements of doubt which may at first seem to attach to them, particularly when we look back upon the achievements of the past century in medicine, in surgery and in sanitary science. And when we study the achievements of other centuries of the past, and see how they have been filled with the more primitive struggles for individual and national freedom; with the evolution of physical and mental science; with the development of architecture, painting, sculpture, and literature, it would seem that the next great cause pressing for agitation, both for the amelioration of unhappy conditions and for further advancement along the lines of previous study and development, is the cause of sanitation. It is the next step for progress in the destinies of man for "elevation in the scale of being." For further intellectual and moral advancement sanitation is indispensable. Progress in other matters will in a measure depend upon it. The movement has already begun. Witness the sanitary benefactions of George Peabody in London, thirty-eight years ago, and the efforts of the London County Council, as previously narrated, and similar work in Liverpool, Glasgow, Paris, and Brussels; the valuable report of the New York Tenement House Commission of 1894, and the labors of the present commission; the report of Surgeon-General John M. Woodworth, U. S. M.-H. S., to the International Medical Congress in 1876; the resolutions of the Conference of Sanitary Officers, at Montgomery, Ala., in 1899, and of the American Public Health Association in 1896; the report of the U. S. Department of Labor upon the investigation of slums, under the authority of act of Congress; and the innumerable contributions on these subjects to the daily and medical press. All the above relate to the subjects which have just been under discussion, and the time has come for more positive action.

The twentieth century will certainly demonstrate the brotherhood of man; the fraternity of nations; and, not excepting even the Peace Conference at the Hague, there can be no more hopeful sign of promise than is held out by sanitation.

Here is a common field upon which the nations may meet with unselfish and common purpose; here is a policy which may well be put in the platforms of political parties, and which, by requiring intelligent legislation, will bring the best men into local politics; a policy which will put a rifle-groove in the shotgun now loaded with spasmodic municipal reforms, good government clubs, and crusades against vice, and weld these latter into one missile of definite direction and force. Here is a means by which the rich may help the poor without further pauperizing them; a cause, which, if advocated will break down unnecessary class distinction; a promise of greater public morality; an assurance of higher life and greater health and prosperity to all, embodying in it the *summum bonum* of human existence, "the greatest good to the greatest number."

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[1] The Forum, February, 1899.

[2] A resolution embodying the plan as outlined above was adopted by the Pan-Amer. Med. Congress on motion of Dr. Eduardo Wilde, Argentine Minister to the United States and Delegate to the Congress.

RESULTS OF SURGERY IN THE AGED.*

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In the study of human longevity, it is not only a question of teaching young people how to grow old, but also old people to grow older. Old age with impaired faculties and physical infirmities is hardly a blessing to individuals or their friends. Many of the ailments to which old people are subject, which worry and distress them, tend to shorten life, are amenable to surgical treatment, and would be unhesitatingly so treated in young people, but which are left alone in them on account of the fear of operations and anesthesia on the aged.

The scriptural axiom, "three-score years and ten" as a reasonable limit to human life, has become so firmly imbedded in the layman's mind that those whose friends have approached this age generally feel that it is better for them to suffer what ills may have come to them, rather than take any chances in procuring aid from surgery. They hold that only a few years at best are left, and prefer to accept them, even with pain and worry, to taking the slightest risk of meeting death from surgical procedure. They are entitled to their judgment, but they should be guided by the accurate knowledge and experience of surgeons as to the exact risk they take. Many lives are lost or shortened by the excessive fear, both in the laity and the profession, of surgical procedure in the aged.

Certainly, a large number of painful affections, such as hemorrhoids, fissure, fistula, hernia, stricture, varicose veins, etc., often carry their victims to the grave, on account of the fear and inexperience of operators in operating on old people. All surgical procedures are hedged about with many conditions. The first, and of most importance, is the nature of the disorder. If this is fatal without operation, all other considerations must be laid aside, and the procedure which promises the best chance of prolonging life undertaken. If, however, the operation is one of election, and not of necessity, we must consider many things, e. g., the physical conditions, heart, lungs, brains, kidneys, etc.; then environment, for a suitable time and place is necessary for perfect results in surgery. Mental repose and absence of nervous tension are important adjuvants in the recuperative process. Sex and age are also to be considered. This last is frequently made the first in the consideration of a surgical operation. Many friends and surgeons leave old people to their fate, with the simple assertion: "Oh, he is too old for operation."

I do not propose to go into any elaborate statistics to discuss with you the influence of surgical operations on the aged, but my opportunities as visiting surgeon to the public institutions of my city, for the study of this subject, have been so unusual that I feel justified in letting these facts have a wider circulation than that of a purely clinical lecture. I shall quote no books nor authorities, but simply state facts which I have observed and the records gathered from hospital charts by persons entirely disinterested in proving any preconceived theories. The facts presented will embrace a brief statement of conditions determining surgical interference, and a tabulated statement of my past sixteen months' work.[1]

CONDITIONS DETERMINING OPERATION.

The old adage, "a man is as old as he feels and a woman as old as she looks," is one of the safest guides in surgery. I have found that sprightly, energetic, ambitious old men stand surgical procedures well, while wrinkled, dull-complexioned, weazened-faced, dried-up old women of lesser years succumb quite easily. On the other hand, well-preserved, healthy old women, with bright minds and clear complexions, are capital subjects for operation. In one such, 84 years of age, I operated at one sitting for double inguinal hernia nearly four years ago, with perfect success, and she is to-day one of the cheeriest, most grateful and happy patients I have.

The condition of the heart in determining on surgical operations is not nearly so important as the laity believe. Organic valvular diseases of the heart, unless of the most marked character, are not a bar to ordinary surgical procedures; fatty heart, and degeneration of the muscles, however, should be distinctly ruled out. As we will see later on, the condition of the kidneys is important, but the appearance of a slight quantity of albumin or an occasional hyaline cast in old people is not of any great moment, and these cases can generally be operated on with confidence.

In summing up these cases, I have made the arbitrary division of 50 years—above and below. Of those over 50 years old, I hold records of 130 cases, of which the average age is 65.8 years. If you take those above 60, there are 79 cases, whose average age is 69.8 years. Of those below 50, I have only completed the records of 76 cases, with an average age of 34.7 years. Many more have been done in this class, but I have not yet been able to complete the records.

The mortality class above 60 was 3 in the 131 cases. Two of these deaths were caused by pneumonia, due to the neglect of the orderly in one case and the unfortunate breaking down of the boiler and consequent exposure to great cold in the other. Several other cases of pneumonia occurred in the same ward from the same exposure, in people who had not been operated on. The third died from edema of the lungs, following operation, and on postmortem, showed chronic Bright's disease Two of these deaths were caused by pneumonia, due to the operation, which should not have been done. It was a mistake, due to the fact that the party whose duty it was to examine the urine did so carelessly or not at all, and made a report which was absolutely out of keeping with the patient's actual condition. The pneumonia cases can hardly be charged to the operations, as they were clearly due to causes beyond the operator's control.

The number of deaths in patients under 50 years of age was 3, making an average of nearly 4 per cent, considerably larger than that in the older class. One of the deaths in this class was due to the same cause, brought about by the same exposure as in the two cases described above.

The character of most of the operations done can not be said to be of the greatest danger, but the large majority would be placed in the class of major operations. I shall enumerate only those above 50 years of age, as we propose to study the influence of surgery on the aged. They are as follows: hemorrhoids, clamp and cautery, 26 cases; modified Whitehead, 8; inguinal hernia, 30 cases, ventral 1, femoral 1, umbilical 2; varicose veins, radical operation, 26; skin grafting, 1; tenotomy, 2; stricture of rectum, 2; resection of bowel, 2; fistula in ano, 9; prolapse of rectum, 2; prolapse of uterus, 2; hysterectomy for cancer, 1; hydrocele, 3; Tumors, removed, benign, 1; stricture of urethra, 3; resection of urethra, 1; ischio-rectal abscess, 2; perineal section, 2; circumcision, 1; varicocele, 1; Bottini operation for enlarged prostate, 6; appendicitis, 2; total, 131. Anesthesias: ether, 83; chloroform, 13; cocain, 30; total, 126.

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[1] This paper was written eighteen months ago, the cases here referred to all occurring in the years 1898-99. Since September, 1899, the number *has been materially* increased—the only death occurring in case of amputation of leg for sepsis due to senile gangrene.

Old people generally fear the anesthesia more than the operation, and it is interesting to observe that of the 217 cases recorded no patient has died or suffered materially from ether, chloroform or cocain. Ether was used 83 times, chloroform 13 and cocain 30 times in the elderly class.

To any one who has ever visited our almshouse and workhouse, it will be unnecessary to say that these cases were not particularly favorable ones for operation. They were not of the robust, well-nourished class, but rather the opposite. Neither were they carefully selected from such material as existed there. Our young house surgeons, in their enthusiasm to gain experience, have persuaded almost every one they found with surgical deformities or diseases to come into the hospital and undergo operation, and I must confess that I have rather tempted Providence sometimes, in operating on the cases presented, simply to encourage the staff in hunting up material, and because the patient wanted the operation. There were 30 cocain operations, 25 of them for varicose veins, from which all recovered with cure or great relief, and without suppuration; 1 clamp and cautery operation for hemorrhoids, 3 for small tumors, and 1 tenotomy, all of which made good recovery. There were 30 inguinal, 2 umbilical, 1 ventral and 3 femoral hernias, making 34 cases, in all of which the peritoneal cavity was invaded. Among these were only 2 cases in which there was a particle of pus. One of these two tore his bandages off during the first night after operation, thus causing an invasion of the superficial wound, which happily amounted to nothing, and the patient made a good recovery. In the other, done by my house surgeon, the bladder was cut, and the urine allowed to escape into the wound, which became infected. The patient recovered in due time, but, as was to be expected, the hernia returned, which, by the way, is the only case of recurrence in five years' experience with the modified operation for this deformity.

The 3 deaths in the elderly class were, unfortunately, all under this hernia class; only 1, however, should be charged to the operation. There were 35 operations for hemorrhoids, 26 by the clamp and cautery method, and 8 by the modified Whitehead operation. All of these recovered without incontinence or prolapse or other inconvenience. In the 9 operations for rectal fistula, there were 8 cures and 1 patient left before we could say what the result was. These cases were all stubborn and slow to heal. The remaining may be read from the list above. I will only call attention to the 2 cases of appendicitis, in both of which the appendix was removed, with the most gratifying results, and the 2 of resection of the intestines, both of these patients being about 70 years of age, and in one I removed over 21 inches of the small intestine, with the most perfect success. All of these were done under general anesthesia, chiefly ether, and the patients made good recoveries.

The mortality, as will be seen, is less than 3 per cent.; 1 per cent., in fact, if we exclude the unavoidable deaths from pneumonia. Albumin in the urine in small quantities has not been taken as a contraindication to operation, but those with fatty or epithelial casts have been rejected. Hyaline casts are not so serious, as they frequently occur in old people without any particular significance. Fatty, flabby old people have not been considered fit subjects for operation, but several have been done with good results. Operations requiring healing by granulations or long suppurative processes have not been considered satisfactory.

Time has always been considered an essential element of success, and the utmost celerity consistent with good work has been practiced. I do not believe that it is a matter of indifference whether the patient is kept under ether twenty minutes or an hour. Every minute that can be saved without prejudice to the operation is just so much gained, and lessens by just so much the danger of shock.

Whether this experience is better or worse than that of others in the same line of work I am not able to say, but certainly it does not sustain the general fear of operations in the aged. I have studied to find, if possible, some reason for the low mortality among these paupers, criminals and vagrants, but without any very definite conclusions. I have thought that perhaps age and hardship have inured them to privation and rendered them insusceptible to shock in a degree that we would not find in the higher walks of life. Certainly shock, which is so much dreaded by the general surgeons, has been almost absent in the large number on whom we have operated. But perhaps the more rational view to take of this is that when an individual has reached the age of 60 or 70 years, in comparative good health, we must assume that he has either taken good care of himself and not undermined his constitution by dissipation and excesses, or that he originally had an exceedingly strong constitutional foundation to build on, and thus presents himself a suitable subject for operation.

DISCUSSION.

Dr. R. H. Dawbarn, New York City—It has so chanced that I have had a great deal of work in this special line while acting for many years as attending surgeon to the Chapin Home for Old People, in New York City, and I have found that they bear operation much better than I should have supposed. The all-important thing is the avoidance of microbic infection as to whether we get almost as good results in old people as we do in younger patients. I have seen case after case heal aseptically and do remarkably well. On the other hand, persons having broken-down constitutions, living in public hospitals, or people advanced in age, lack the vital resistance which is necessary to oppose microbic invasion, and should this occur, you get bad results. An elderly man can not fight against a suppurative process like a young one.

Dr. Hart, China—I have operated many times for different diseases in old men, and very well remember one case of a man who had had a depression of the frontal bone for ten years. He had been struck by his brother in a fight at the age of 55 and came to me at 65. The depression was half an inch deep and I operated on him to remove three depressed fragments in the frontal bone. The patient made a splendid recovery and there has been no recurrence of the epileptic attacks from which he previously suffered. A number of men at the age of 75 have come to us and stood operation without any shock whatever. The middle class of Chinese stand operation well, but members of the upper do not, and this is probably due to their mode of living. Rice and meat are the principal articles of diet for the poor. Another class of cases occurring in the aged are those that suffer with epithelioma, but I find they all recover very readily without suffering from shock. Talking about old men in China, a man 75 there is practically where a man of 95 is here. A large number of the population die before 60, and a man of 70 is a rarity. I have operated on a man at the age of 90 who recovered without shock, his desire for operation being due to his wish that he could live to the age of 100, and thus get a special honor from the emperor. I told him I could not guarantee this, but the operation was performed some years ago and he is still living and looks well. I am sure the diet has a great deal to do with the patient's' ability to stand shock, and the surroundings and occupation also have their share of influence upon operations.

Dr. J. P. Tuttle, in closing, said the point brought out by Dr. Dawbarn in reference to the inability of old people to stand suppuration is brought out in his paper, but was not read. In every suppurative case the healing was prolonged and difficult. We get just as good results in aseptic cases in old men as in young, but not in the suppurative cases.

SARCOMA OF THE INTESTINES, WITH TABLE OF FIFTEEN CASES OF RESECTION.*

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Very little has been written on sarcoma of the intestines and many errors have crept into its consideration. Conclusions have been drawn from its supposed analogy to carcinoma of the intestines which the facts do not warrant. Prominent among these errors are: the accepted opinions as to the most common locations of the tumor, the early involvement of neighboring organs and the liability to produce obstruction. Few of our text-books on surgery refer to the subject.

The "International Text-Book of Surgery" (1900) says: "It may occur in any portion of the intestine—the cecum seems to be a favorite spot and several resections of this portion have been successfully performed for sarcoma."[1]

The "American Text-book of Surgery"[2] says that as sarcoma of the intestines usually gives rise to symptoms, of obstruction, and consequently comes under surgical treatment usually after extensive infiltration, it is questionable if it is prudent to attempt a radical operation as an early recurrence is almost inevitable. It suggests an intestinal anastomosis to exclude such obstruction should it occur.

Senn, in his text-book on tumors[3] (1900), as well as in his earlier "Intestinal Obstruction,"[4] puts it most frequently in the upper part of the small intestines, about the ileocecal region, the colon and the rectum. He says it usually comes to the surgeon after it has caused an obstruction. If in operating for an obstruction a sarcoma is found as its cause, an enterectomy is indicated if the tumor has not extended beyond the intestinal wall. If it has so extended he advises an artificial anus or, better still, an intestinal anastomosis.

Although a comparatively rare disease, it is much more rare in literature than in reality and deserves more attention. Of all the cases presented in the clinics during my medical course, one of the most deeply impressed on my memory was that of a young man summarily dismissed by Professor Maclean with the explanation that he had an abdominal tumor, undoubtedly sarcoma; that it would soon prove fatal, and that nothing could be done. The pale face of that patient has remained indelibly impressed on my memory. I find that a similar impression of the possibility of the disease together with its hopeless prognosis, is very prevalent among medical men. They all speak of personal acquaintance with sarcoma of the abdomen. How many of these cases are sarcoma of the intestine?

STATISTICS OF THE DISEASE.

F. Smoler,[5] analyzing 13,036 autopsies held at Professor Chiari's pathologic-anatomic institute of the German University, at Prague, found primary sarcoma of the intestine 13 times—1 in 1000. These occurred in fifteen years, 1883-1898. It occurred 7 times in the ileum—twice including the ileocecal valve—3 times in the jejunum and ileum and twice in the cecum. In the other case it occurred in the lower ileum and was associated with an adenocarcinoma of the pylorus in a woman 70 years old. Ten were males, 3 females; 5 times the patient's age was between 30 and 40, 4 times between 20 and 30, twice between 10 and 20, and twice over 40. Probably there were few children in the 13,000 autopsies. In 7 cases there was dilatation of the diseased gut, in 4 contraction, and in 4 there was no change in the lumen.

N. Moore[6] reported 2 cases of sarcoma in 26 of new growths in the alimentary canal. Both were males, one 25, the other 40 years old; 1 involved the descending colon, the other the descending colon and the ileum.

There is a single specimen in the U. S. Army Medical Museum. It was contributed by Dr. J. N. Yarnall, Washington, D. C. It is a portion of the ileum of a male 5 years old. It involved the entire circumference of the bowel. There was some narrowing of the canal, somewhat dilated above. Dr. E. Libman, pathologist for Mt. Sinai Hospital, New York City, recently read an exhaustive paper on this subject before the New York Pathological Society, and published in the *American Journal of the Medical Sciences* for September, 1900. He reported five cases which have occurred in this institution.

R. F. Weir[7] tabulating all resections of the intestines for malignant growth up to 1886, reports two cases of sarcoma out of a total of 35.

REPORT OF CASE.

Before considering the surgery for intestinal sarcoma, I will report a case which occurred in my practice at Kalamazoo, Mich., in the fall of 1899. In criticizing the report of my case I ask that it be remembered that it was done in a small private house with only a forlorn hope of life being prolonged.

The patient was Harold S., aged 5 years. His mother's mother died at an advanced age from carcinoma of the uterus; his father's mother of carcinoma of the stomach. About June 1, 1899, the child fell from a fence and was caught between two boards and held hanging on the abdomen, head down, for some minutes. The injury was considered trifling at the time and no physician was called. About the middle of June he began to complain of abdominal pain, had repeated attacks of vomiting, his appetite left him, and he began a steady decline without any appparent cause except the general symptoms of indigestion. About the middle of July, I discovered a nodule less than one inch in diameter, in the median line midway between the umbilicus and the ensiform cartilage. It was smooth, hard, round and freely movable over a radius of four or five inches. Its growth was very marked and by September 15, it was about the size of a hen's egg. It then became fixed in the left hypochondriac region so as to produce by position an obstruction of the bowels with great pain. By careful manipulation and placing the patient upon the right side, I succeeded in moving the tumor from its fixed position and the obstruction disappeared. The diagnosis was an abdominal growth, probably omental and probably sarcomatous. A very grave prognosis was given. The tumor had all along been freely movable and an exploratory operation was advised in the hope that the growth—of whatever character—might possibly be so situated that it could be successfully removed. The operation was at first declined, but in November the parents finally decided to have it done, provided it might be performed "at home." It had been so long delayed that it was undertaken with the expectation of finding so much adhesion and involvement of important structures that removal would be out of the question. The patient was by this time very anemic, emaciated and feeble. He could scarcely walk. His temperature was 100 F. and pulse 120, soft and feeble.

Operation.—At 10:30 a.m., Nov. 18, 1899, the abdomen was opened in the median line above the umbilicus, the incision being four inches in length. The growth was lifted from its bed in the left hypochondrium, and out of the abdomen. The principal growth was irregularly oblong, about four inches in length and three in width, and consisted of a contracted thickened mass with a partial intussusception of the ileum into the colon, drawing the healthy appendix with it. Bringing out more of the ileum, a secondary growth was exposed about two inches in diameter, which had been felt in the right iliac fossa. About three inches of fairly healthy intestine connected the two principal growths. The mesentery and mesocolon were long, allowing of easy manipulations. Several of the mesenteric glands were involved in secondary growths.

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Notwithstanding the extended involvement, it was decided to remove the growth with all the mesenteric glands as the only possible hope of prolonging the boy's life. This was done by making an exsection of the ascending colon, together with six or seven inches of the ileum and all the mesenteric glands involved, making an end-to-end anastomosis with the Murphy button. The abdominal wound was closed, leaving a narrow strip of gauze running down to each side of the line of anastomosis. This was considered advisable on account of being obliged to operate in a small private house where we could not be assured of thorough asepsis.

The patient received two hypodermic injections of strychnin, 1/60 gr. each, during the operation, and immediately after its completion he was given 8 oz. of normal salt solution per rectum and the same amount in the subcutaneous tissues of the chest. He suffered much less from shock than was anticipated. About three hours after being placed in bed, the father—who was chief nurse—stepped out of the room for a moment and upon his return found him sitting up in bed. After twenty-four hours his condition was comparatively good, pulse 130, temperature normal, with no vomiting. Gas had passed the bowel. He continued to improve steadily. His highest temperature noted was 100 F., about the eighth day. His bowels moved on the fourth day. The gauze was removed from the wound on the fourth day. The serum which followed it had a slightly fecal odor. By the end of the first week a decided fistula had developed. This did not retard the recovery and closed spontaneously within four weeks of the operation. He was out of bed in three weeks and walked after five weeks. The button was passed on May 11, 1900, six months after the operation. The patient continues well and, six months after the operation, weighs 50 pounds, 17 more than before operation.

Microscopic Examination.—Drs. G. F. Inch and F. E. Allen, of the Michigan Asylum for the Insane, at Kalamazoo, made the microscopic examination of the tumor and pronounced it undoubtedly a small, round-celled sarcoma. Microscopic sections were also examined by Drs. A. C. Crofton, of Pasadena, and Stanley P. Black, of Los Angeles, with the same conclusions. The following is Dr. Allen's report:

The gross specimen, consisting of six or seven inches of small intestine above the ileocecal valve, the same amount of large intestine, the vermiform appendix and several enlarged mesenteric glands was received in Müller's fluid, from which it was removed, washed in water and placed in alcohol—80 per cent.

The large intestine had been cut lengthwise, disclosing the tumor and the latter cut across. The tumor was a firm mass about the size of a hen's egg, surrounding the ileocecal valve like a ring, the greater part lying to one side, a depression in the surface corresponding to the opening into the small intestine. This opening easily admitted the forefinger. The tumor projected into the lumen of the large intestine, was covered with the intestinal mucosa and attached by a broad base to the bowel wall. The cut surface was white and glistening and yielded, on scraping, a milky fluid. The appendix was apparently normal. In the fat of the mesentery near the junction of the large and small intestines were several mesenteric glands, some of them somewhat enlarged. Four or five inches from the ileocecal valve, on the small intestine, was a second tumor nearly as large as the other. It was not connected with the lumen of the bowel, nor did it project into it, but in close apposition to the intestine between the two layers of the mesentery. On cross-section it resembled the large tumor in structure.

On account of the size and the fact that the tumor had taken the place of the bowel wall, the large growth was evidently the primary tumor, and the growth on the small intestine a secondary in a mesenteric gland. Portions were taken from the primary tumor, the secondary and from one of the smaller mesenteric glands, fixed in alcohol, imbedded in paraffin and stained with hemotoxylin and Van Giesen's method.

Primary Tumor: Sections were taken from the periphery of the tumor. The mass of the structure was made up of small round cells with deeply staining nuclei; there was a fine delicate reticulum, composed in some parts of branching and anastomosing connective-tissue cells, and the reticulum could everywhere be seen lying between and separating the tumor cells. There were not a great many blood-vessels, but those present had very thin walls and in some cases the cells themselves formed the walls. At one side of the section was seen the mucosa with its gland ducts cut transversely and its underlying muscularis mucosa. All throughout the mucosa are seen these small cells which surround the glands, even penetrating between the columnar cells lining the ducts. The muscularis mucosa is in some places almost obliterated by the pushing in of the cells between its unstriped fibers. The submucosa has disappeared, as has also the muscle coats of the bowel, and their place is taken by the tumor structure. At one side of the section may be seen a few muscle fibers, probably those belonging to the muscular coats which are infiltrated and separated by the tumor cells.

Secondary: This section shows practically the same tumor structure, but the normal relation of the coats of the small intestines is better preserved. The intestinal wall is seen with its mucosa, submucosa and muscular coats, but the tumor cells are found between the muscle fibers and have penetrated even as far as the mucosa.

There are two modes of origin possible for the growth of the primary tumor: 1. It may have arisen in a mesenteric gland, causing its enlargement until it reached the bowel wall which it soon infiltrated and disintegrated. 2. It may have arisen from a solitary lymph follicle in the large intestine, and this latter view is the more acceptable, as it is the common mode of origin for sarcoma of the intestine.

Again, *a*, from the nature of the cell, a small round one with a nucleus staining so deeply and occupying so much of the cell that it requires careful focusing to make out the ring of protoplasm about it; *b*, from the nature of the reticulum a fine branching vascular connective-tissue stroma; *c*, from the nature of the relation of the reticulum to the cells lying always between and about them, and *d*, from the nature of the relation of the cells to the blood-vessels, forming in some cases their walls, it is evident that the tumor belongs to that class of small round-cell sarcomata known as lymphosarcoma, since it reproduces to a certain extent the normal histology of a lymph gland.

TABLE OF CASES OF RESECTION.

After a careful search in the library of the New York Academy of Medicine, I am able to present the accompanying table of cases of resection for sarcoma of the intestine.

Of the fifteen cases, 9 were males and 5 females. The youngest was 1½ years old, the oldest 52; 5 were under 10 years, 1 between 10 and 20, and 2 between 20 and 30; 1 was 30, and 5 between 40 and 50. The small intestine was alone involved 10 times; both small and large intestines twice; the cecum once; the transverse colon once. The Murphy button was used in 4 instances. Of the 15 patients, 9 recovered from the effects of the operation. The cause of death in the 6 fatal cases is put down as peritonitis twice; sepsis and pneumonia, 1 case; collapse, 1; not stated, 2 cases. Of the children under 10, only 1 succumbed to the operation. This was a boy of 8, from whom 52 cm.—21 inches—of ileum and cecum had been removed. All the other deaths occurred in patients over 40, except possibly 1, whose age is not given. In none of these cases is it positively stated that the correct diagnosis was made before operating. Usually it is put down as obscure. Once only was it done for obstruction. Of those who survived the operation, 1 died after three weeks, another in two months, from widespread metastasis. Two were well one year after operation; 1 is well six months after. Mesenteric glands were reported involved in 4 of the patients who recovered. In addition to these I found 2 cases recorded of exploratory opening of the abdomen, in which, on account of the widespread extension of the disease, no resection was done: 1 by Professor Madelung,[8] another by Tschermakowski.[9] Death followed in a few days in both cases.

Once suspected, no time should be lost in waiting for the diagnosis to be cleared up. The time for hesitating to do an exploratory laparotomy is past, especially in the face of so fatal a disease as sarcoma. There has been so much advance in intestinal surgery of late that every patient of this kind should have the benefit of that possibility of relief. Professor Kukula[10] has recently tabulated 31 cases of resection of more than 1 meter of small intestine, and has demonstrated that there is practically no limit to the amount of intestine that can be safely removed. In one patient only two-fifths of the small intestine was left. As only 3 of these 31 patients died from collapse, there is evidently not so much shock from these operations as the first attempts at resection seemed to indicate.

RESECTION FOR SARCOMA OF INTESTINE.

No.	Operator.	Year.	Sex.	Age.	Part Removed.	Method.	Result.	Variety.	Remarks.	Where Reported.
1	Atlee, Philadelphia.	1882	F.	48	Small intestine.	Interior of tumor opened *into* intestine, pedical simp-	Died 2 days later.	Spindle-cell . . .	Supposed to be ovarian tumor.	W. A. Edwards, Trans Phila. Path. Soc., also Phil. Med. Times, 1884.
2	Hofmokl.	1885	F.	24	Cecum, 9½ inches.	Sutures; drainage	Recovered . .	Adeno sarcoma. .	. . . .	Gessellsch. der aertze in Wien, May 1, 1885.
3	Lange.	1885	F.	...	Transverse colon, 6 inches.	Czerny - Lembert sutures.	Died 9th day; Perforative peritonitis.	Sarcoma	Both ovaries were sarcomatous.	R. F. Weir, Table of resections of the intestines for malignant growth, *N. Y. Med. Jour. Feb. 13, 1886*, p. 196.
4	Nickolaysen, Christiania.	1886	M.	28	18 cm. small intestine	Lembert suture	Recovered. . .	Myosarcoma spindle-cell.	Obstruction; mes. glands involved.	Myosarcoma intestini tenuie exstirpation with gut section, Helbridelsen Norsk. Magaz. for Lagind, R. 3, Bd. 15, S. 12.
5	Zuralski, Koenigsberg.	1889	M.	40	Small intestine.	. . . .	Recovered . .	Small spindle-cell sarcoma.	Fourteen months after onset mes. glands involved.	Diss. Königsberg, 1889, *Beitr. z. casuistic* der Dünndarm Geschwuelste.
6	Von Baracz, Leanberg.	1889	M.	8	55 cm. cecum and ileum.	Czerny - Lembert suture.	Died, 24 hours.	Sarcoma	Diagnosis; kidney or colon tumor.	Arch. of klin. Chir., B. xlii, 1891, 9, 491. Ueber fünf *Darmresectionen.* Ein Beitr. zur Darmchirurgie.
7	Madelung, Rostock	1891	M.	52	Small intestine.	End-to-end union *suture.*	Died 18 hours [illegible] autopsy.	Round-cell *sar-* [illegible]	Oper. *undertaken* as *carcinoma*; collapse afer apparent excellent condition.	Ueber primäre Dündarm sarcome, M. Baltzer, Arch. f. klin. Chirurgie, 1892, xliv, p. 717.
8	Babes and Nanu, Bucharest.	1893	M.	30	Small intestine.	Lembert suture.	Recovered; well one year later.	Myosarcoma, origin in muscle *layer of intestine*	*No dif. diag. before operation.*	Berl. *klin.* Wochenschr., 1897, p. 138, Ein Fall von Myosarkom des Dünndarms.
9	Rovsing, Th , Copenhagen.	1896	F.	1½	Jejunum...	Murphy button.	Recovered; returned; wide involvement; died in 2 mos.	Sarcoma intes. jejuni.	. . . .	Hospitals Tidende, no. 46, 1897, 9. *1085.* Primaert Tindtarmsarkom.
10	Heinze...	1897	..	45	110 cm. small intestine.	. . . .	Recov'd; well 1 year later,	Sarcoma	M. glands involved	Zur Casuistic der primären Dünndarm Sarcoma, Diss. Greifswald, 1897.
11	Lannelogue, Bordeaux.	1897	F.	8	⅞ cm.; location not named; probably sm'll intes	. . . . . .	*Recovered*	Sarcoma	Diagnosis, tumor *of ovary.*	Jour. de Med. de Bordeaux, 1897, Vitrac et Lanbie Jour. de med. de Bordeaux, 1897, p. 495, Sarcoma d'intestin; enterorrhaphie *circulaire*; cure.
12	Siegel, Ernst, Frankfort.	1899	M.	3¾	30 cm. jejunum.	Double suture, drainage.	Recovered; died 19 days later from return.	Small round-cell sarcoma.	Aut'psy; pancreas, *stomach, mesentery* and kidneys sarcomatous.	Berl. klin. Wochensch. 1899, p. 767, Ueber das primäre Sarcome des Dünndarms.
13	Weir, R. F., New York City.	1900	M.	40	8 ft. 4 in. jejunum and ileum.	Lateral anastomosis; Murphy button.	Died; peritonitis.	Sarcoma	Mesentery involved.	Surgical section N. Y. Acad. of Med., May, 1900, Med. Rec.
14	Weir, R. F., New York City.	1900	M.	45	8 in. jejunum.	End-to-end; Murphy button.	Died after 11 days; sepsis and pneu*monia.*	Sarcoma	Diag. obscure from enormous intermittent distention of *stomach* and bowel above tumor stenosis.	Oral communnication to writer.
15	Van Zwalenburg, Kalamazoo, Mich.	1899	M.	5	18 in. ileum and colon.	Murphy button.	Recovered; well after six months.	Small round-cell lymphosarcoma.	Exploratory operation; m. glands removed.	. . . .

From a study of these cases I am led to the following conclusions: Sarcoma of the intestine is more common than our text-books indicate. It much more frequently affects the small than the large intestine. The ileum seems to be its favorite location. Sarcoma rarely produces stenosis. Dilatation is more frequent. Usually it grows from one side of the bowel entirely. In my own case the symptoms of obstruction were evidently due to a change in position of the freely movable tumor. It was entirely relieved by manipulation. The diagnosis is difficult and will always remain obscure, still if a smooth freely movable tumor be found in the abdomen, unless it can be otherwise satisfactorily accounted for, we should be reminded of the probability of *sarcoma of* the intestine—especially if there is also present the general picture of sarcoma with its peculiar anemia.

We are learning that many of the cases of so-called collapse *and death* from shock are after all cases of sepsis. Sepsis following an operation is a question of technic and should not stand in the way of a good result here. The children in my table bore this operation well; only one of the five succumbed to the procedure. The way my patient went through it was a constant revelation to all who knew the circumstances.

In the present state of our knowledge of sarcoma it almost goes without saying that the only treatment for the intestinal form is resection. When an exploratory opening is made and a well-advanced sarcoma is found, exsection at great hazard is justifiable, not only on account of the absolutely bad diagnosis of the disease itself, but also because of the dangers of sepsis in the presence of tissues of such low vitality and of the dissemination of sarcoma foci by the exploration. The two reported cases of this kind terminated fatally in a very few days. In this connection we have a right to assume that in extirpating a sarcoma we remove a toxin center as truly as when we open an abscess.

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I need not dwell on the other hysterical stigmata; the list is a long and varying one, although the more essential points are well known and fairly common: backache, headache, insomnia, constant fatigue, are signs not peculiar to hysteria, but when we add to these a tender spine, tender ovaries, vague wandering pains with no discoverable substantial reason for their existence, intense interest in the varying symptoms presented, disturbances of sensibility, perhaps paralysis or contractures, above all if the symptoms are too numerous or too variable we may without hesitation call the case a hysterical one.

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Taking such a typical case, when, where and how shall it be treated? As to the time to begin treatment, the sooner the better is a good rule, and the only thing which would fix any special time is that immediately after the menstrual period is usually the most suitable moment for commencement. My own experience is in favor of treatment in a private house rather than in an institution. A private room in a good hospital, if the patient can have a personal nurse, will serve. As a rule such cases do not do as well if they depend on the hospital staff for nursing. One takes too many chances in the daily or hourly change of nurses and the unoccupied time for brooding is too great. In a hospital ward the matter of isolation is especially difficult to manage, and I do not like sanitaria or such institutions, chiefly for the reason that they add a new difficulty to the management of convalescents unless isolation can be thoroughly maintained to the end of the treatment. The herding together of partially recovered patients in large rooms and meeting-places usually results in the swapping of symptoms, in comparison of the virtues or vices of the respective nurses, and in consequent general dissatisfaction. A proper room in a proper place having been secured, it may be added that light, sunshine and ventilation are naturally of high importance.

Nurse.—My rule is never to use the nurse who comes with the patient from home. When in exceptional instances I find it necessary, or yield to the importunities of the patient or relations to do so, sooner or later I find cause to regret it. The same rule applies to relatives, and generally against nurses with whom the patient has a previous acquaintance. Enthusiasm controlled by educated intelligence is the first requisite. As a rule this is found in its best forms in young nurses. This matter of the choice of a nurse can not be too much insisted on; scarcely any other single element is so vital. I prefer to have a nurse who is agreeable to the patient, but this is not always necessary, and if the patient finds that she can get a change of nurses because she says she does not like the nurse, she will sometimes go on changing indefinitely in the hope that she may discover one more amenable to her ways of thinking. Still I never hesitate to change the nurse if the patient has a reasonable objection to offer, since even the best nurses do not suit every patient.

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As to the period during which isolation must last, this is a matter to be judged by the attainment of the desired results, not by the calendar. In ordinary cases of moderate degree six or eight weeks of absolute isolation is generally long enough and at the end of the time one may admit a single visitor, to observe the effect upon the patient, afterward gradually allowing the return to more ordinary methods of life. In the more serious cases, especially those of simulated disease or with grave hysterical symptoms, many months of isolation may be necessary and a life of careful and methodical regulation must be continued long after almost all symptoms have disappeared if the inveterate hysteric is not to relapse. Toward the end a limited number of letters are permitted and, by way of reward for good conduct, the patient may write briefly once or twice a week to some one member of her family. If so long a period of separation from home, friends, and domestic surroundings sounds like a severe measure, it should be remembered that what has to be accomplished is the breaking up radically of the habits of long invalidism.

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BIBLIOGRAPHY.

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Electricity.—Of the original measures proposed for the combination which makes a complete rest treatment, electricity is perhaps the one which may with least disadvantage be omitted. Nevertheless I seldom omit it when the patient is on full treatment, if for no other reason than because it fills an hour or so of the day which might otherwise be unoccupied. There are only two forms which are commonly prescribed. The slowly interrupted faradic current is applied to the motor points all over the body, thus moving in turn every accessible muscle. The muscles should be contracted three or four times each and an appreciable amount of exercise as well as a very decided tonic influence is thus to be had. This will require in an ordinary-sized person half an hour, at most, if the operator knows the motor points. If the spine is tender the treatment is finished by passing a rapidly interrupted current from the nape of the neck to the soles of the feet, using a large electrode at the nape of the neck and another smaller one placed a few minutes on each foot. If constipation is troublesome, special applications may be made to the abdomen, using a rapidly interrupted current passed deeply from side to side and from the back to the anterior abdominal wall. Many patients are much afraid of the use of electricity from having been hurt by ignorant or careless methods. There is no reason why it should be painful if rightly used, and many nurses are well instructed in its ordinary applications. If the patient expresses alarm, and especially if she is of an apprehensive kind, it is best to begin the first day or two by making a dummy application, the battery working so that the patient can hear the sound, but the electrodes being used without connecting the wires to the battery. If this causes excitement or the patient complains of strange symptoms, continue the use in this fashion for two or three days, assuring the patient that she will not be hurt. If she still continues to fuss about it, after two or three days I tell them simply and plainly that they have fussed over the application of two damp sponges.

Special Difficulties.—In the course of treatment certain difficulties always arise. A bilious attack may be the not unnatural or unexpected accompaniment of the full feeding. Starvation in some degree, a laxative, or a return for a few days to a milk or skimmed milk diet, is sufficient treatment. Constipation, especially at the beginning of the course, may be annoying, but should not continue to be so if the massage is properly performed. Still in occasional cases, in spite of the most careful manipulation and electrical application, this may make trouble. Usually the ordinary aloin and strychnia-pill at night and morning will suffice to overcome. For very old inveterate cases, some more radical means must be used. Hot-oil injections, special manipulations of the abdomen, electrical applications per rectum are some of the means.

Insomnia is another frequent difficulty of the first nights of treatment and occasionally persists throughout the course. The use of drugs should be avoided as far as possible, as nothing can be steadily given without some ill effects on the circulation or blood-making functions or digestion. The drip-sheet, the wet pack, and the abdominal compress are among the hydrotherapeutic measures which may assist in overcoming sleeplessness. Massage at night as well as in the day time, applied somewhat less severely, will help many patients. The application of electricity to the spine as described is found sedative by others.

As to the question of moral control and the teaching of the patient to overcome for herself the habits, modes of thought, and ways of life which digged the pit for her to fall into, I despair of even suggesting them in the time at my disposal, but it can not be too strongly insisted on that anyone who attempts the cure of hysterical patients without the largest comprehension of the moral aspects of the treatment, without intense human sympathy and the power which imagination gives to put himself in the place of the sufferer, may perhaps be able to cure the bodily conditions, but will cure them only to send his patient out to relapse at the first opportunity. The treatment should include, as a recent patient described it to me, schooling in wisdom as well as in better physical methods of life.

I am told that one difficulty experienced by physicians in the effort to apply the rest treatment is in getting patients out of bed, and at a meeting of the ASSOCIATION this criticism was made a year or two ago, but, like the moral control, it is a matter which can scarcely be described exactly to any one else. I can only recall once in a good many years having had this trouble, and then it was with a hypochondriacal patient who expressed her preference for being pushed in a wheeled chair to walking. However, walk she did and was still walking when last heard from. Great care is needed in getting patients out of bed. A person whose circulation is regulated to the requirements of recumbency by six weeks of supine position can not be expected to suddenly begin sitting up without feeling faint, weak and fatigued in a very short time. My own rule is that the patient sits up in bed for ten minutes two or three times a day to begin with, that when this has been continued for two or three days the time is increased to fifteen minutes and then she is allowed to get out of bed, of course without dressing, and sit in a comfortable chair, carefully protected from cold, for twenty minutes twice a day with a distinct order to go back to bed before the expiration of that time if she feels fatigue. For a week before getting up, the masseuse is directed, after finishing her manipulations, to give passive movements of each extremity every day; after three or four applications the patient does the movements actively. In another day or two the nurse begins to steadily increase by five minutes every period of sitting-up. It will thus require about a week before she is up for more than forty minutes, but when she is up this long without inconvenience, I allow a few steps to be taken, not more, and at the end of ten days, or thereabouts, from first getting out of bed, she goes for a short drive, but is not allowed to walk up and down stairs to reach the carriage. If she is not in a place where there is an elevator she is carried. The same care is exercised about every little advance and increase in activity.

During this time of getting up the Swedish movements, which were begun before the patient got out of her bed, are continued and increased in number and variety, special exercises being given for the defective parts of the body.

I believe that the causes of failure with these patients lie more usually in neglect to perceive and allow for the moral conditions of the case than misunderstandings of the physical state. The after-care, the choice of the place in which the patient shall spend some weeks or months of the convalescent period, during which she should be making steady gain in nervous control as well as in physical force, must occupy the physician's attention. When it is possible, if the patient can not see the physician in person every week or fortnight, the nurse should either see him or report regularly to him in writing, and I make it my endeavor to follow such cases for a period of at least six months pretty closely, and I would pursue them even longer, but by the end of that time they are usually well enough to get tired of bothering with reports to the physician and disappear.

DISCUSSION.

Dr. William G. Spiller, Philadelphia—So many cases of hysteria are seen in Vienna and Paris that the danger of mistaking organic disease for hysteria is possibly greater there than in America. A most interesting case of hysteria, resembling ascending neuritis, was brought to me by Dr. Rugh a year or two ago. The patient was a young girl who had run a needle through the end of one finger. She was told by her friends of results known to follow such injuries, and her arm soon became purple and swollen. The case was treated at first as one of neuritis, and some improvement occurred under this treatment, but the symptoms returned. I then saw her in consultation with Dr. Rugh and found the arm very much swollen and painful, and placed on a splint, but motion of the fingers at this time was fairly good. During the night following my examination the pain suddenly ceased, and when I saw her the next day she had no movement and no sensation in the arm. I decided that the case was probably one of hysteria, and suggested to Dr. Rugh that he should remove the splint at once and give her the proper treatment based on suggestion. He did so, and after two or three days all the symptoms had disappeared. Dr. Rugh has told me that she has had one or two similar attacks since, but that they were always cured by suggestion.

It is sometimes very difficult to make a diagnosis between hysteria and other functional diseases. Krafft-Ebing recently reported a case in which the tremor was very much like that of paralysis agitans, but because it commenced simultaneously in both upper limbs and had existed for many years without rigidity, and because the knee-jerks were not exaggerated, he regarded it as probably a case of hysteria.

Dr. C. K. Mills and I have had under observation a patient who undoubtedly had hysteria and signs also of Parkinson's disease. The position of the body was very suggestive of paralysis agitans. We think it is impossible to say at present whether this case will prove to be one of paralysis agitans or not. If it should prove to be a case of this disease I think we should make a mistake in saying that it was one of hysteria that had passed into paralysis agitans. I have now under observation a case in which I find it impossible to make a diagnosis between hysteria and Huntington's chorea.

I have seen a young woman who had fallen from one of the galleries during the burning of the Ring Theater in Vienna, and for many years following this event the symptoms that developed made a diagnosis between hysteria and disseminated sclerosis very difficult.

Dr. Douglas Graham, Boston—I have been very much pleased in hearing such an interesting résumé of "Fat and Blood, and How to Make It." Many years ago I called attention to the fact that the indiscriminate use of oil in doing massage was an excuse for ignorance, and I am glad to find this statement confirmed by what Dr. Mitchell says.

Dr. Briggs—I would like to ask Dr. Mitchell as to the use of oil in massage, and on what he bases the conclusion that it lessens the value of the massage. I saw one case in consultation a few years ago where there were most undoubted hysterical symptoms at the beginning of true meningitis that destroyed life in three or four days after I saw the patient.

Dr. Cooper—While Dr. Mitchell's paper laid great stress on the technic of the treatment of hysteria, he did not lay as much as I would like to have heard on that particular phase of the technic which has to do with the moral treatment of the patients. There seems to be no definite way of getting hold of their moral life and placing it upon a purer and better plane.

Dr. D. J. McCarthy, Philadelphia—As to the differential diagnosis between organic disease and hysteria, while I would not go as far as Dr. Lloyd in saying that every case of hysteria has an organic basis, still I think you can find certain cases in which there is an organic basis for the disturbance. During the past year a case came to Dr. Burr, and later the specimens were sent to me—a case which had been diagnosed as hysteria. At the autopsy nothing gross was found, but while the cerebrum was as large as the average, the pons itself was distinctly smaller. The spinal cord had developed into two distinct spinal cords, and finally joined. Evidently there was a defective development of the central nervous system, with lessened resisting and recuperative powers.

Dr. A. E. Sterne, Indianapolis, Ind.—There are certain conditions of an organic character that offer a greater opportunity for confusion than do tumors of the brain. It seems to me that among these syphilis ought to take a more prominent rôle than has been given. The mutability of symptoms in hysteria is seconded very closely by the mutability of symptoms in syphilis. This is also true in regard to the change of the color fields. Another point that ought not to be lost sight of is that hysteria in males is a very different thing from hysteria in females, so far as its manifestations are concerned. The symptoms are very much more stable in males than in females, so far as my own experience goes.

In a case at the hospital, not long since, one which I was preserving for a specially good clinic, a large negro, six feet two or three inches tall, who had been a cement worker, carrying hods and barrels, had suddenly lost the use of the entire arm and leg on one side. We had the characteristic hypothenar symptom of syringomyelia, and he had some of the other characteristics, so that I left the diagnosis open. A few days later, in the clinic room, on examination I found that not a single symptom of that which had been present was there, and I was holding a clinic on a perfectly well man. I have since been in doubt whether I had a case of hematomyelia or hysteria. I believe it was a case of hemorrhage in the spinal cord and not hysteria. Most of these patients are constipated before they take the rest cure. A very large percentage of the hysteria is due to the long-standing constipation. It is not the diet particularly which causes the constipation. I never give milk with anything solid; I believe that milk is not to be digested, but simply to be absorbed.

Dr. G. W. Drake, Hollins, Va.—All hysteria has an organic basis. If people imagine they are sick, they are; there is an abnormal condition in some part of the nervous system. In listening carefully to the discussion of treatment it was evident to me that, while some of the gentlemen have tried very hard to make the differential diagnosis between organic diseases and hysteria, yet their treatment of hysteria is along the line of the treatment of organic disease. They are careful about the diet, and they give massage, and all their treatment is material. Because a lesion can not be seen with the microscope is no proof that it does not exist. Every ache or pain has a material pathology, and every abnormal action or disordered function is the consequence of a material disorder.

Dr. D. I. Wolfstein—I would be very much obliged if Dr. Mills or Dr. Mitchell, in closing, would try to draw the line a little more closely as to those cases which are not proper cases for the rest cure.

Dr. Charles H. Hughes, St. Louis, Mo.—I should couple with the rest the diversion cure and the change of environment cure. There are patients to whom in my experience the rest cure has proved the most restless kind of cure. So while I regard the rest cure for a certain class of overstrained society people, the class who largely came under the elder Mitchell's hands, and with whom he had the best results, as an excellent thing, there are patients to whom it is not applicable.

Dr. Charles K. Mills, Philadelphia—One matter to which attention was called is very important, viz., the diagnosis of hysteria from syphilis of the nervous system. Because the tracts of the nervous system are not found properly developed in a certain case, or a certain portion of the nervous system is relatively undeveloped in another case, apparently normal during life, except for the presence of hysterical symptoms, it is not just to argue that in such findings we have the anatomical basis of hysteria. The truth is that hysteria occurs in individuals of almost all types of organization, normal and aberrant. Every neurologist has seen hysteria in high-grade imbeciles, or has seen hysterical episodes in paranoiacs, and has seen the true hysterical stigmata in different varieties of insanity. On the other hand, he has seen under the influence of toxic causes, or mental strain, or profound physical exhaustion, or whatever cause, internal or external, a true hysteria develop in individuals not suffering from any form of insanity or arrested development.

Dr. **John K. Mitchell**, Philadelphia—Several questions have been asked about the uses of massage. As to why oil should not be used, any one who has practical experience in manipulations with or without oil, or has attempted at all to do them himself, knows that deep kneading, which is the most important procedure of massage, altogether the most important, can not be properly done with the skin oiled; further, that any diminution of the small amount of friction which takes place between the skin and the hands of the operator is undesirable, because that friction is part of the treatment and should not be lessened in that way. This is quite apart from the unpleasantness of being greased all over, and the encouragement of the growth of hair, which you will find in women, is a great objecton to the use of oil.

Dr. Cooper asks why I did not preach a sermon for which I have not had the text supplied. If he will supply the text in the person of a patient for whom he wishes to know the proper moral treatment, I shall be glad to try to answer him. The moral, unlike the general physical treatment, is different in each case, and must meet the exigencies of each particular problem.

Dr. Herman suggests that effleurage massage might be used. I distinctly said not effleurage. Deep kneading is the kind of massage we make most use of. Effleurage is extremely irritating to most nervous patients

As to contraindications, these are not very numerous. Certain forms of acute disease seem to me to stand in the way, and, of course, the dispositions of certain patients render them unsuitable subjects for this form of treatment. We began by excluding such cases; we began by saying in what way the cases suitable for the rest treatment should be selected.

Finally, Dr. Hughes, who had not heard what I said, criticized what he thought I had said and what he thought I had omitted. I am quite sure that no sane person has ever proposed the rest treatment as an exclusive system or a universal panacea, or said that it is desirable for all cases; and Dr. Weir Mitchell has repeatedly said that he never thinks of using it until every other possible means of treatment has been exhausted. As to its being a method suited only for women suffering from too much fashionable society, I think I treat almost as many washerwomen and quite as many school teachers as those from any other class of life. If these persons are overstrained from social diversions I am afraid the poor souls will not be allowed much amusement. I can only insist and repeat, finally, that it was not proposed as a universal panacea, but only as a last resort, because of the immense time which it takes, and the great expense which it entails.

HEREDITARY SUBNORMAL COLOR-PERCEPTION.*

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Subnormal color-perception frequently presents a grotesqueness which always subtly attracts the attention of students of medicine and psychology. That there is a physical basis for this aberration of the sense of sight, is proved, although at times it seems necessary to search for the origin of the peculiar condition by assuming some metaphysical or vital perversion of energy of the human body causing an incoördination of neuronic action from the impinging light rays. Speculation, however, may be indulged in as to this type.

The more intimate we become with the knowledge of family histories found in such types of diseased functions, the more apt we shall be in determining the possible atavistic tendency to this state; and in knowing this possibility, we are as physicians made better able to cope with the broad subject of consanguinity of marriage or, indeed, of marital union of persons having any "weak points" in their moral, mental and physical composition. Then, too, the subject of education in this broad light is interesting food for thoughtful research. This optimistic side of evolution can be better balanced with degenerative tendencies in the race; and by detailed studies, therefore, of regeneration and tendencies to shoot into a higher life, we may hope to bring it about in some measure. The preceding thoughts emanate from the fact that lowered color-perception occurs much less frequently in women than in men. By some it is said that only one woman in 3000, or .03 per cent., is subject to perversion of the color sense; and that one in 25 men, or 4 per cent., is so affected. This difference must be largely due to cultivation. It is also patent to us that acuteness of color-perception varies in persons of the same sex. In a recent "Study of the Deaf and Dumb,"[1] the impression has come to the writer's mind that they have a peculiar nicety of perception of the sense of color. It is very likely a compensatory epiphenomenon, just as the blind are said to be more acute in acoustic and touch perceptions.

The rather rare condition of an instance of color-blindness in a woman, as recorded by Drs. Holmgren, Jeffries and others, bears also on the subject of the heredity of the disorder, inasmuch as the transmission of the color-defect frequently runs through several generations, much as do the organic pigmentary defects of the retina and optic nerve degeneration as shown by Leber, Habershorn, Norris, Oliver, and Gould.

In reference to relational ties in such cases, Wilson and Jeffries tersely say that few of the adult color-blind whom they have tested did not know of some blood relative similarly affected. Consanguinity in ancestral marriage has long been known as causative to a marked degree.

Horner's law as to the hereditariness of subnormal color-perception bears very notably on all such cases. Briefly, he says: "The general law is, therefore, that sons of daughters whose father was color-blind are most likely to be the same, although not without exception; or color-blindness is transmitted in the revertible type from grandfather to grandchild." In support of this, Magnus says: "The heretidariness of color-blindness has been known as long as the defect itself. All who have seen many color-blind will have noticed that it was in their mother's family that other cases were found. I have frequently been assured that this or that cousin on the *mother's* side was also color-blind; and, now and then, that a more distant relative of the mother had also color-blind sons. In view of Horner's law, this is readily explainable; and this peculiar law is all the more interesting since we find that it is the same in reference to the heredity of other physiological abnormities or defects."

As a more or less imperfect contribution to the subject, the record of the following case is herewith given. J. W. T. reported at my office on Feb. 15, 1898, suffering from hypochondriasis and recurrent melancholy. The man was very intelligent, and it was evident his social position, living among a set of uneducated relatives, "much annoyed" him. He had well-marked arteriosclerosis. The urine contained pus from the bladder cells and was alkaline in reaction—this the result of chronic cystitis following hypertrophy of the prostate gland. There was slight accentuation of the aortic second sound, but there were no evidences of other organic disease elsewhere in the body. There is no need of detailing mental phenomena other than stated.

This man could not distinguish red from green. The eyegrounds and the interior of the eye appeared normal.

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[1] American Annals for the Deaf, January, 1901.

There were no reversals nor contractions of the visual fields nor optical defects. He had discovered the abnormal color-perception years ago while a seaman, when he frequently placed red and green lights in false positions, thus causing him to lose his situation.

Of his children, one had chorea; one daughter was very nervous; one suffered from lateral curvature, and a girl aged 15 years also, on repeated testings, had been proven to have a lowered degree of appreciation of red and green. She was well otherwise. There were no other discoverable cases of subnormal color-perception in the family.

The patient's mental fabric was always queer. A year after I saw him he became insane—delusional—and was committed to an asylum for the insane, in which he died some eight months later. Dr. D. D. Richardson, in the State Hospital for the Insane at Norristown, was kind enough to send me the notes of the autopsy, in which it is stated that there was an absence of organic disease of the brain.

This case is most interesting because, in the words of Oliver,[1] "this fault of optic-nerve structure, which does not show itself for several years after the birth of the individual, indicates to the writer's mind at least that there is an inheritance of a physical material which is not only shorter lived than that which is found in the same organ in other organisms, but that it has a briefer existence than the other organs in the same general organism, a fault which shows that an imperfect material has been born, and dies prematurely because it is subjected to an amount of wear and tear that would not seriously disturb or injure a properly formed substance. Further, it serves as a living evidence that a substance has been improperly made, most probably on account of physical imperfection and repetition of faulty cell combination of similar kind extending through several generations: an evidence, which in measure, says that primarily acquired pathological characteristics of structural form may be transmitted through forthcoming generations, as imperfect formation of similar structure in due proportion to both the want of hygiene and care given to the afflicted subjects, and the reassociation of similarly degraded developmental cells; an evidence which gives answer in part to the transmission of ordinary structural characteristics, which, if acted upon in the same way as those which are not made, as it were, in the same peculiar manner, will produce far different and even what may be determined idiocratic results."

Singular as it is, the idealistic genius may yet be subject to subnormal color-perception, as in the case of our poet Whittier. In these instances we are baffled by man's limitations of knowledge to an annoying degree.

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DISCUSSION.

Dr. G. W. Drake, Hollins, Va.—The paper is valuable to me in the fact of its arguing a physical material basis for the trouble. Heredity and environment make the man. Heredity has reference to the material constitution. We transmit to posterity our material peculiarities and so we transmit these mistakes or errors of function—abnormalities of form and structure. Color-blindness is the result of an abnormal condition of the color or visual center, which may be transmitted from father to son, and you will find it often traceable to heredity. The paper is valuable in that respect, and I note and call attention to the fact that there is a growing tendency—and you will *notice* it in every meeting of the Association—to materialize these troubles, and, as I remarked yesterday, some of our diseases that are misnamed will be corrected. I think the paper is a very valuable contribution to the Section.

Dr. Robert H. Porter, Chicago—In reading and discussing papers before this Section the word "abnormal" is often used when "morbid heredity or morbid nerve manifestations" would more accurately express the idea of the reader or speaker. When disease makes sufficient impression on the organism to be transmitted from one generation to another, to simply say that it is an abnormal manifestation, the term is hardly accurate enough to convey the proper idea or meaning. It requires a strong impression to make the individual deviate from the normal and in *medicine* at least the effects should be called morbid, instead of abnormal. The paper read was of great interest to me on account of showing the relation that color-blindness has to other tendencies to degeneration. Most morbid nerve manifestations are associated with deterioration in some part of the nervous system. And, in the study of these problems I think that as the pathologist increases his investigations and the powers of the microscope are extended, the tendency will be to find structural change in the nerve cells. Perverted nutrition and disordered circulation of the blood are associated with most chronic nerve maladies, and sooner or later these are likely to produce structural changes in the cells or fibers of the nervous system.

Dr. F. S. Pearce, Philadelphia—I wish to express my wonder that all this mysterious class of hereditary disorders being transmitted through the unaffected mother as a rule, and generally to a son, as for example, in hemophilia. Pathologists tell us that a pigmentary degenerative disease of the retina is transmitted in the same fashion, i. e., through the mother, and presenting signs only in the male sex. While the point mentioned in the paper—early youth being the time for the manifestation (not that I believe subnormal color perception exists in earliest childhood in the majority of instances and the patient simply did not know that he was color-blind)—is unexplained, it may be that after a beginning steady use of the eyes, the faulty structure existing, a chemical change in the cell takes place, which may not even be seen in our methods of careful microscopic examination. Then, when the sight is taxed, the cell-function is overwrought, and finally degeneration takes place, bringing about the abnormal or morbid function at this particular epoch of life.

THE SIMPLEST EXPLANATION OF THE FUNCTIONS OF THE NERVOUS SYSTEM.*

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This paper is designed to be simply a suggestive presentation of the subject, not an exhaustive exposition. It is a brief rehearsal of the method employed by me in teaching physiology at the Chattanooga Medical College.

The key to the simplest explanation of the functions of the nervous system is, in my opinion, to base all nervous phenomena on the hypothesis of the existence of a specific energy peculiar to nervous tissue. It also very much simplifies the explanation to give to this energy a distinctive name and assign it a place with the natural energies. Conferring on it the dignity of a name will emphasize its importance, and it will be easier and more interesting to study its action and formulate its laws.

The rapid development of the laws of electricity, and its many practical uses are, doubtless in a great measure, due to the differentiation and naming of this energy so soon after its discovery. It was better that Röntgen's discovery was named X-rays than to have had no name.

It would not be inappropriate to call the specific energy, peculiar to the nervous system, "neuricity," from the Greek *neuron*, as electricity was named from *electron*, and for no better reason. The brain contains storage batteries of neuric energy for the supply of motive power to all the muscles and other organs and tissues of the body. Every voluntary muscle has its little storage battery in the motor area of he brain, from which energy is discharged by the action of the will. When it is desired to move the arm, the will discharges the storage batteries for the muscles needed, and neuric energy flashes along certain fibers of the corona radiata, the posterior limb of the internal capsule, the crusta of the crus, the pyramids of the bulb, the anterolateral columns of the cord, out of the cord by the anterior root of a spinal nerve, and along that nerve and its branches into the muscles, causing them to contract. In an analogous way may be explained the motion of other parts of the body controlled by the action of voluntary muscles. By this method the anatomy of the brain, cord and spinal nerves is made a more interesting study, and the practical necessity of a knowledge of it is demonstrated.

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In the medulla oblongata are located the little storage batteries for the supply of neuric energy to the involuntary muscles and to the glandular organs of secretion and excretion—to the liver, the lungs, the kidneys, the heart and blood-vessels, the salivary and peptic glands, etc. The spinal and ganglionic nerve-centers are subordinate storage batteries dependent on the dominating batteries in the brain, from which they are constantly re-energized. Sever their connection with the brain and the action of the organs which they supply soon ceases. The heart will beat when removed from the body, but only for a short time, on account of the impossibility of re-energizing its ganglia.

SENSATIONS.

Passing hastily over this part of the subject, we come next to the sensations. The simplest and most satisfactory explanation of the special senses is as follows: The brain, in the dark camera of the cranium, contains sensitive protoplasmic plates adapted to the formation of images by the action of neuric energy, and the pictures thus formed should be called neurographs. Sensations are the perceptions of neurographs by consciousness. The sensation depends on the neurograph, and the latter on the character of the cerebral plate on which it is formed and that of the peripheral endings of the nerves with which it is connected.

The Sense of Hearing.—Sound waves striking on the membrana tympani communicate vibrations to the internal ear, causing the liberation of neuric energy at the peripheral endings of the auditory nerve, and this is conducted to the auditory center of the brain, and there makes a neurograph of sound.

The Sense of Seeing.—Light from an object, falling on the retina, liberates neuric energy, which is conducted by the optic nerve and other fibers to the visual center of the brain, and there makes a neurograph of light. The beholder can not see an external object, nor its image on the retina, but a neurograph on the brain corresponding to the retinal image.

The Sense of Touch.—Mechanical touch communicating pressure to the peripheral endings of sensory nerves liberates neuric energy, which is conducted by afferent nerve-fibers to the sensory center of the brain, and there makes a neurograph of touch, corresponding to the character of the impression made on the peripheral nerve endings.

The Sense of Smell.—Odoriferous particles coming in contact with the membrane in the nose liberate neuric energy at the peripheral endings of certain nerves, and this is conducted to the olfactory center of the brain, and there makes a neurograph of smell.

The Sense of Taste.—Sapid substances in the mouth liberate neuric energy at the peripheral endings of gustatory nerves, and it is conducted to the gustatory center of the brain, and there makes a neurograph of taste.

The Sense of Pain.—Lacerations, lesions, and hurts of any kind liberate neuric energy at the peripheral endings of certain sensory nerve fibers, it being conducted to the pain centers of the brain, and there making a neurograph of pain corresponding to the impression on the part affected. The sensation of pain is the perception of a disordered or abnormal neurograph, and has a material pathologic basis, either in the cerebral plate or some part of a sensory nerve with which the latter is connected. Every ache and pain has a material pathologic basis—a molecular disarrangement or displacement of matter.

The Sensation of Heat.—Sensations of heat are the perceptions of neurographs of heat formed on the brain by neuric energy conducted from the peripheral endings of sensory nerve-fibers, and liberated by the application of heat.

I do not believe that the heat and pain centers of the brain are the same, and I do not believe that either is identical with the centers of touch and general sensibility. These centers are as different as the sensations of which they form the material basis. Form determines function. Internal molecular changes are not necessarily manifest in a change of the superficial form, but they are, nevertheless, the basis of altered function. There is a distinction between internal and external form. The latter is visible, the former invisible. After the departure from a mass of matter of vital energy the internal form is changed by the action of chemical energy, and so the physiologist is prevented from determining the character of the living form, the microscope revealing only the superficies of the dead bodies, and chemistry analyzing the constituent elements.

The relative positions of molecules in cells and atoms in molecules are changed after death, and they doubtless undergo many changes in life, in response to the action of the various natural energies, but all modified and dominated by the presence of vital energy. It is interesting to study the neurons in the brain, and to imagine the great diversity of molecular movement produced by the action of neuric energy. The brain is a living kodak, constantly at work taking sight, sound, smell, taste, touch, and also mind pictures. It is covered over with neurographs resulting from "impacts" and "impulses" on peripheral nerve-endings in the various sense organs, and also from impulses of the mind. These neurographs are discernible to the consciousness of the individual in whose brain they are formed, but can not be demonstrated by scalpel or microscope. They are the product of the changed relations of molecules in neurons or atoms in the molecules or changes in both.

Consciousness learns the significance of these changes by experience, and transmits its knowledge to the mind.

It is important to make a sharp differentiation between brain and mind, and to avoid the use of the terms cerebral and mental as interchangeable synonyms. The brain is the mind's organ and medium of manifestation. It is the head of the nervous system, and contains different centers for the different faculties of the mind, and separate centers for the various sense organs, muscles, and glands of the body, together with pathways for neuric energy between the central and peripheral nerve-endings.

The study of the cerebral centers, their intercommunications and their nervous connections with the peripheral organs and tissues, is essential to a knowledge of the causes of the various insanities and monomanias, the defects of the special senses, and the disorders of muscles and glands.

Not alone because the brain contains the intellectual and other psychic centers is it the most important organ in the human economy, but also because it contains the dominating storage batteries of neuric energy essential to the normal condition and functional activity of every tissue and organ. Centripetal and centrifugal energies control the movements of the planets, gravitation pulls the apple from the tree and hurls it to the ground, electricity runs the telegraph and telephone, and neuricity governs the man machine.

The energies are only known through their action on matter, and their names are arbitrary and conventional, but none the less essential and convenient than those of matter. Much would have been gained by assuming, long ago, the cause of nervous phenomena to be one of the natural energies, and giving it a specific and permanent name. While I do not insist on giving the agent of nervous action the name "neuricity," I do protest in favor of some name, any name, even if it be Y or Z, X having been already appropriated. Dispensing with such ill-defined and obscure terms as "nerve force," "nerve impulse," etc., which tend to confuse, and fail to satisfy the student of physiology, will remove much vagueness and greatly facilitate the study of neurology. I would be glad to see a uniform and systematic study of neuricity inaugurated, with the view of unfolding its laws, and demonstrating its correlation to the other natural energies. By this line of research will be developed the simplest explanation of the functions of the nervous system.

The failure to properly differentiate brain and mind has assigned to the domain of metaphysics and psychology work which belonged to the departments of physics and physiology. The functions of the brain are often confounded with the faculties of the mind, and, as a consequence, cerebral are misnamed mental diseases.

DISCUSSION.

Dr. D. I. Wolfstein, Cincinnati—I think that the reader of the paper is to be congratulated for having evolved for himself and the students a rather simple set of similes which are to make nervous force seem plain to them, but I do not think that anything could be done to the science by denominating the nervous force as neuricity. It is only a multiplicaton of terms to say neuricity. It reminds me of the saying of Goethe, that when our proper ideas are completely wanting the proper word usually occurs to us. I think this is the case here. The gentleman is naturally attempting to bring back to a material basis a great many things that probably never will be explained on such a basis, although that is the hope. As I said, I simply wish to emphasize the fact that it would be rather undesirable if we would want to introduce into the already overburdened nomenclature a class of names that would not simplify the subject.

Dr. G. W. Drake, Hollins, Va.—It is very evident that my friend and critic did not comprehend my paper. I have had this theory, as you might call it, in my mind for years and years, and this is the first opportunity I have had of putting it on record, and I want it on record, because I believe the future will show the justice of the claim I make. Scientific investigation is coming around every session toward the views advocated in my paper. Note the session at St. Paul and every one we have had for several years—they all made the material basis of nervous phenomena paramount. But I have reference to his mistaking my meaning. I said I did not care anything about the name; just let us determine on some specific name, so that it could be studied as an entity and not a vague and obscure thing. The force or energy I am describing, I will take his name for it, if he will take my theory. The mistake he made was in believing that I confound neuric energy, as he said I changed the names several times; I did not. He may say I change the name electricity when I say electric energy. I spoke several times of neuric energy instead of saying neuricity.

Just give that peculiar energy which belongs to the nervous system a name, or give it no name, but study it as an entity and as one of the natural energies, but I do insist on a name of some kind. But it is not vital energy; that is the point, showing that he did not comprehend my paper at all. Vital energy is in every cell of not only the human being, but in every cell of every vegetable in the universe. Every cell has vital energy, but nerve-cells alone neuricity, a peculiar energy associated with the nervous system. Force and impulse and all such terms are confusing. A peculiar energy belongs to the nervous tissue. Whether it is confined to it I can not say. If you will give that a name and study it, it will greatly facilitate the explanation of nervous phenomena.

PSYCHIC THERAPEUTICS.*

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A dictionary definition of this term says, it is "a systematic use of personal influence, especially that of the physician, in treatment of nervous diseases." In this definition may be found a good and sufficient reason for the success of some practitioners of medicine and apparently unaccountable failure of others. Nor is failure or success attributable to the specific materia medica remedies made use of by the physician in attendance upon the sick.

The influence of the mind over the body in conditions of health as well as of disease is always paramount. In a consideration of this influence, it is desirable that we remember the prime subdivisions indicated by the will, intellect and emotions. Together, these constitute and are the faculties of the mind. In health they are in a state of equilibrium. In sickness the balance is disturbed. The will becomes weakened, as shown by an increased pliability [illegible] The intellect is disturbed, which is [illegible] impairment of judgment and ability to reason, while the emotions through weakness itself become exaggerated.

These are the general physical and mental conditions which confront the physician in his daily work, and the way in which he meets them is of equal significance with his prescription. If he inspires confidence by his presence, a material factor has entered the lists as a remedial agent, but skepticism or doubt of professional ability will act as a disadvantageous element in its psychic influence upon any patient. Hence, the doctor himself becomes a powerful therapeutic agent. When strong in his perceptions, firm and positive in opinion, confidence is engendered. His will and judgment are made to dominate that of the patient and patient's family.

On the other hand indecision, wavering and apparent uncertainty militate against both physician and patient to the degree in which it is apparent. There is a psychic element present in all conditions of disease; and in some maladies may be said to hold the fort. So dominating are they in character that they sometimes completely overshadow actual pathologic states. This is particularly the case among many who are highly educated, refined and cultured. Their education, culture and environments develop a supersensitive organism of the mental and nervous system that is productive of symptoms of hysteria with its long train of sympathetic troubles ascribed to so-called functional derangements. So strong are these influences, that they not infrequently dominate and mask everything else that is manifestly present in a given case.

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The first and most important factor in a treatment of all such cases is to be found in a systematic use of the personal influence of the physician over his patient. This will take character and manifest itself in accordance with the dictates of his own judgment, and his plan of treatment will be as variable as the number of patients recorded on his visiting list. A discriminating use of positive instructions with placebo adjuncts is often as imperatively required as a so-called heroic treatment with drugs. Because of a recognition of this potent element in a treatment of diseased conditions, many, not a few, but many old practitioners become more or less skeptical in their appreciation of the value of drugs as curative factors, and their public expressions along these lines give a strong support to so-called hypnotists, "christian scientists" and faith-cure believers.

"A legitimate practice of medicine takes cognizance of all psychic influences and turns them to account in a treatment of disease. The personal influence of a physician should always be firm, not vacillating, positive and never negative. These attributes tactfully administered are sedative and may be anesthetic and narcotic. They possess the therapeutic property of being able to allay irritability and excitement. To illustrate: a visit to a dentist will usually allay the torment of a toothache, while the entrance of a physician within the lying-in chamber ameliorates if it does not completely arrest the throes of labor pains in a parturient woman. The personal influence of the physician in these and a whole host of actual pathologic as well as functional disturbances may become a most potent factor in this treatment.

Phobia or fear and joy are powerful psychic factors in both cure and causation of disease. Either will in a supersensitive individual produce pain or fatigue, exaltation or depression, thereby exciting the entire sympathetic nervous, muscular and glandular functions of the body. Under their influence the sphincters relax, a large amount of light limpid urine is voided, the functions of the liver and alimentary canal are disturbed, being either suppressed or exaggerated. For a control of these abnormal states or conditions the personal influence and suggestions of the physician are singularly powerful and effective.

This same personal influence of the physician is often most potent as a therapeutic agent when agreeing with the expressed or unexpressed wishes and desires of the patient.

Hope, the very anchor of the soul, prolongs life and sometimes saves it through the cheerful and positive assurance of the attending physician. The wise man who is a successful practitioner, uses his personal influence as a stimulant, sedative, anodyne, narcotic, anesthetic and nervine; and does it systematically, as though it were as important a therapeutic measure as the giving of a tonic, purgative or opiate. It is this personal influence that makes some men great and others small.

All that is known of the entire materia medica, as well as other resources in the art and science of medicine, are as wide open to the command of one physician as of another, and the differentiation between them is founded upon but two accomplishments: ability to diagnose pathological conditions and a systematic use of personal influence in the treatment of disease. All other therapeutic aids are but valuable adjuncts, not one of which is to be for one moment in the slightest degree deprecated, for they are cofactors of the greatest importance. It is this systematic use of the personal influence of the physician that gives any foundation to christian science or faith curists. Eliminate this one powerful agent and there is nothing left of a visionary vagary.

The influence of environment and suggestion is as much a legitimate part of the reputable physician's armamentarium as a medicine chest or an instrument case; and no part of their value as therapeutic agents is conceded as belonging to quacks and charlatans. The whole domain of life, with all that is collateral to it from horizon to horizon, is in the broad and unlimited field of legitimate medicine. The personal influence and its systematic use is but a single therapeutic agent, and it is so potent and so powerful that its importance can not go unrecognized in a successful practice of the healing art.

DISCUSSION.

DR. T. B. GREENLEY, Meadow Lawn, Ky., said that he had seen a number of hysterical cases in which the symptoms were due directly to suggestions by the patient's friends. He referred to one case, that of a young woman who lost her voice. He decided that it was all imagination and gave her a placebo, but gave her very specific directions as to its use, and found her all right at the next visit. Another thought she was paralyzed and had spells like convulsions, which were clearly excited by the suggestion of her mother. He left a liniment with very particular directions about its use, and the next morning she was all right.

DR. A. BERNHEIM, Philadelphia, said that suggestion treatment loses some of its value by show performances. He thinks that doctors can do a great deal of good by psychotherapeutics. He has seen several cases treated and cured by psychotherapeutics. Hypnotic exhibitions are prohibited by law in Germany, as they may do much harm when in the hands of charlatans, and particularly because many patients may resent any treatment that has been exhibited on the stage. Psychotherapeutics can be utilized in practice. He cited the case of a young man who had to rise ten or twelve times a night to urinate. No cause for this could be found. He told him firmly that he must not get up, and the patient informed him later that he has since only had to get up once at night. He tested him by asking him if he ever had earache, and the next time he came, he said that he had earache.

DR. F. G. WHEATLEY, North Abington, Mass., said that the paper opens an exceedingly important field of therapeutics and one which teachers of therapeutics do not sufficiently recognize in the regular course of instruction given in the colleges. The tests of the ordinary medical examining board do not take into account the personality of the individual at all, and yet this personality is such an important element in the success or want of success in life that it seems as if it should be taken into consideration in granting licenses to practice medicine. The power of some physicians to influence patients has more to do with their success than their scientific attainments. A man may learn all that can be learned and pass his examination with great credit and go into practice and be a failure because he can not impress his clients with the idea that he can do them good. This power is not only of value in hysterical cases, but in others as well. If we can make our patients believe that we know what we are about and can do them good, the results will be satisfactory, but if we simply give them advice, without impressing on them our personality, we lose a great element of success. As the speaker said, there is an imaginary element in therapeutics and the use of this is one element of success. This is now principally in the hands of "Christian scientists" and the like. Until the medical profession meets this in a proper way we shall meet with persons who believe that faith and Mrs. Eddy can cure them when the best doctors fail to do so.

DR. J. N. UPSHUR, Richmond, Va., cited the case of a woman who had been sick for three weeks with gastric catarrh, but not of much moment. She had been in the hands of a young physician, who had certainly failed to impress her with his personality. At the time the speaker saw her she was not only convinced that she was very ill, but she was certain that she would die very soon. He made some recommendations which the doctor failed to carry out. Ten days afterward she was thoroughly disgusted with the treatment and, getting no better, the speaker was sent for and the other physician dismissed. It was learned that she had been in such great pain that the doctor had been giving her large amounts of morphin hypodermically daily. These were promptly stopped and she was told she would have to get along without them. She thought that she had a tumor in the neighborhood of the right ilium, and complained of persistent pain on that side. The speaker took a tape line out of his pocket and proved to her that both sides measured exactly alike and that there was no tumor. He never heard a word afterward of this tumor, and she got well very soon.

TREATMENT OF DEFLECTION OF THE NASAL SEPTUM

COMPLICATED BY TRAUMATIC DEFORMITY OF THE EXTERNAL NOSE.*

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PHILADELPHIA.

For the purposes of this paper, deformities of the external framework of the nose are divided into two classes: flattening of the bridge of the nose, producing the deformity commonly called "saddle-back nose," and deflection of the end of the nose. A third class might be made of a combination of these two conditions, but would be without significance as far as concerns operations on the septum to secure increased breathing space. It should be borne in mind that operations upon the septum produce little effect upon the shape of the external nose, and are undertaken for the sole object of improving the breathing space.

Traumatic flattening of the bridge of the nose is generally due to the fracture of the base of the nasal bones, with dislocation from the nasal processes and depression of the nasal bones, with rotation outward on their long axes. The upper shield cartilages and sometimes the septum are involved. The most common lesion of the septum is a dislocation of the triangular cartilage and anterior portion of the vomer from their bony attachments. Both below and behind there is a deposition of new material, and usually a thickening, both of bone and cartilage. The result is the so-called septal redundancy. The septum has become too large to be crowded into the median line. The cartilaginous plates of the septum are also sometimes separated. Saddle-back nose does not interfere in the least with the success of an operation for deflection of the nasal septum, but lateral deflections of the external nose decidedly complicate matters.

Lateral deflection of the end of the nose is usually the result of fractures of both nasal processes, the nasal bones and displacement of the upper shield cartilages. The septum may or may not partake of the deformity. If it remains straight, it will no longer be parallel to the curved lateral nasal walls.

If deflected to a greater degree than the lateral walls, it will produce stenosis by encroaching upon the lumen of the naris of the concave lateral nasal wall. Therefore, the problem, in cases of stenosis in noses deflected to one side, is not to make the septum straight, but to render it as nearly as possible parallel to both lateral nasal walls. This is sometimes not easy to accomplish.

The methods that may be used to bring the septum into the median line will be considered with reference to septal redundancy, with reference to resiliency, and also with reference to the method of supporting the deviated area in its new position.

The simplest operation for the correction of septal deflection is expanding the strictured side of the nose with the index finger, which, with a slight boring motion, and with its palmar surface pressing upon the septum, is thrust through the anterior naris to a position beyond the deflected area. When carefully done the triangular cartilage thus can be dislocated from its attachments below and behind. The fragments overlap each other, thus providing for redundancy in both the vertical and horizontal diameters. The dislocated cartilage may be supported in a vertical position by a pin or tube. The operation has the advantage of being submucous. If septal redundancy was the main cause of failure in operations for the correction of septal deflections, nothing could be more simple or better than this operation.

It is not septal redundancy, but septal resiliency that is the main cause of failure in operations for deviated septa, and, because in operations where the mucous membrane of the septum is uncut, it is impossible to thoroughly bend the triangular cartilage; this operation commonly results in failure more or less complete; the septum sometimes remaining for several months in a vertical position and then gradually springing back into its former abnormal position.

The objections to simply removing the thickened angle of a deviated septum is that while it increases the breathing space in the narrow naris, it leaves the unobstructed naris in the same condition as before the operation. Often it is of the unobstructed naris that the patient complains and frequently when the ears become diseased, as a result of a septal deviation, it is that upon the same side as the unobstructed naris which becomes affected first.

Sajous describes in his book, published in 1885, what, he states, is the simplest operation for the correction of septal deviations. An incision is made along the crest of the deviation. The upper or movable flap of the septum is then pushed over and beyond the lower into the median line. It seems unnecessary to state that in Sajous' operation, when the upper portion of the septum is pushed over and beyond the lower, because of the septal redundancy, the parts overlap and the resistance of the lower flap tends to prevent the return of the upper into its former deflected position; but because a straight incision does not enable the flaps to overlap except in one diameter, either the horizontal or vertical redundancy is not provided for, and hence the resiliency of the septum is increased by the bending of the upper flap; because in either the vertical or horizontal diameter, the septum is crowded into a space too small for it.

In 1895, Watson described an operation, which he stated, was a modification of the well-known procedure of Ingals, but which was really a combination of the operations of Ingals and Sajous. A beveled incision was made through the crest of a horizontal deviation, and the vertical redundancy cut out with a knife, care being exercised in making both incisions that the mucous membrane on the concave side of the septum remained intact. In a paper published in May, 1899, he described his incision as along the crest of a horizontal deviation with a vertical cut from the anterior point of the first incision. The mucous membrane of the concavity of the deflection not being included in either incision, the first of these operations would seem to yield two triangular flaps; the second, one large triangular flap. Because the mucous membrane of the concave side of the septum is not cut through, and hence would prevent thorough bending of the flaps, it would seem that the operator's main object was to provide for redundancy, which is accomplished to the same degree as in the operations of Roberts and Asch, who also employ triangular flaps. Redundancy of a septal deviation, both in the vertical and horizontal diameters is provided for equally well by a stellate (*), a cross-shaped (+), an L-shaped, an inverted T-shaped, a horizontal H-shaped (⌶) or a U-shaped incision. This is not the case as regards resiliency.

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Roberts stated that unless the resiliency of the flaps is thoroughly destroyed his operation will be a failure. Asch is almost equally emphatic as regards the necessity of thoroughly bending each flap in order to diminish, as far as possible, the resiliency of the septum. Doubtless the success of any operation for the correction of a septal deviation depends more upon the thoroughness with which the flaps are bent than upon any other detail of the technique.

It is the india-rubber-like resiliency of the septal cartilage, rather than the redundancy of a septal deviation, that interferes most with the success of operations for the correction of deviations.

Is there any method of overcoming this resiliency besides thorough bending of the flaps, which in the case of cartilage is never entirely destroyed by the most thorough bending? Leverage may be utilized by employing a quadrilateral flap. If its base be bent, the longer such a flap the more leverage has to be overcome to bring the edge of the flap into its former position. This is not true of triangular flaps, because the larger the flap the larger its base and consequently the greater its resiliency. The principle may be demonstrated by cutting flaps of various shapes in india-rubber balls. A narrow quadrilateral flap remains almost without support in the position in which it is bent. A triangular flap of the same size does not.

In lateral deflections of the whole tip of the nose, the part of the septum involved usually is not great and the deflection is of the so-called vertical variety. In some cases the area involved is not wider than the thickness of a lead pencil. It is difficult to understand how any operation by means of one or more V-shaped flaps could be done in a case of this kind. A U-shaped incision around the deflection, however, is readily made and yields a narrow quadrilateral flap consisting of the entire deflected area, and when the base of such a flap is thoroughly bent, it will sometimes hang in the position in which it is placed without any support whatsoever. If allowed to remain unsupported in the previously unobstructed naris the gradually returning resiliency of the base of the flap and the traction of granulations adhering from the upper ends of the U-shaped incision will gradually draw such a flap into the vertical line in the majority of instances; but there is always some danger of overcorrecting the deflection. It is, therefore, best to see that the flap is in the position desired one week after the operation. This was the method pursued in six cases of lateral deflection of the whole tip of the nose, four of which were exhibited at the Philadelphia College of Physicians.

The technique of the operation is as follows: The field of operation is cocainized and then exposed by means of a self-retaining speculum. A thin saw is introduced along the floor of the nose beneath the deviation. The sawing is continued in a horizontal direction until the saw has penetrated somewhat deeply into the tissues. The direction of the sawing is then rapidly changed to a nearly vertical direction. During the sawing it is of the utmost importance that the saw should be held exactly parallel to the septum; in order that the cut shall be around and not through any part of the deviation. The length of the vertical crura of the U incision is then quickly lengthened by means of a small bistoury curved on its flat, and the flap is thrust through the hole in the septum with the tip of the forefinger.

While the finger is still in the naris, it is carried up along the anterior and posterior crura in order to be certain that the edge of the flap has completely cleared them and the neck of the flap is then sharply bent. The whole operation can be done with considerable deliberation in two minutes. It is not necessary to denude the edges that are in contact, as the pressure results in necrosis at least of the superficial layer of the mucous membrane, after which the parts unite. Should nonunion result, the edges may at any time be freshened with a ring-curette, a simple and painless procedure.

It is well to slip in a tube immediately after the operation and decide twenty-four hours afterward as to the necessity of wearing it. The tube serves to control the usually trifling hemorrhage which, however, may be so excessive as to require the insertion of a large plug of absorbent cotton saturated with peroxid of hydrogen into one or both nostrils.

In my earlier operations for correction of septal deflections, I invariably used an Allen tube when support was required; later, a tube devised by Dr. D. Braden Kyle. This tube is somewhat similar in shape to those of Asch and Meyer, but is made of pewter and so thin that its shape can be modified by pressure of the fingers, or quickly pared to any desired shape with a penknife. Most recently I have had the Allen tube slightly altered in shape and made of this same material, and I find the readiness with which its length and shape can be altered to be a great convenience.

However, the question of support is of little consequence in comparison with that of counteracting the resiliency of the septum. The writer claims for his method of operating that the shape and position of his septal flap enables an operator to overcome resiliency more certainly than by any method previously described. When the resiliency of a quadrilateral flap has been destroyed, at least for the time being, by bending the neck of the flap at a right angle, the overlapping of the edges of the flap upon the septum as occurs in the operations of Sajous, Seiler, Watson, etc., affords sufficient support in more than 80 per cent. of the cases, and no tube is required. Beveling the edges of the flap is of no consequence, because it does not increase the resistance tending to prevent the return of the flap to its former deviated position.

DISCUSSION.

Dr. J. O. Roe, Rochester, N. Y.—I have been very much interested in Dr. Gleason's paper. His operation, as he has described it, is, however, like the Asch operation, adapted for the correction of deviations of the cartilaginous septum, and therefore adapted only to about one-third of the cases of deviation of the septum. The deviations of the septum may be divided into deviations of the bony portion, which comprise not more than 10 per cent. of the cases, deviations of the osseocartilaginous portion, which comprise fully 60 to 65 per cent., and deviations of the cartilaginous portion alone, which comprise about 25 or 30 per cent. of the cases. Therefore, in considering the correction of deviation of the septum we should take into consideration the correction of deviation of every portion of the septum and not the correction of the cartilaginous portion alone. In correcting lateral deformities of the nose, the lateral displacements which so often result from injuries, we have to take into consideration two conditions: 1, the cosmetic effect, and 2, the establishment of a normal condition of the nose for respiration. In operating for a cosmetic effect it is important that we should not lose sight of the respiratory function. Many patients apply to us for the correction of a deformity of the nose, rather than for the relief of insufficiency of respiration caused by the associated deviation of the septum. In correcting the deviation of the septum, therefore, we should take into consideration the correction of the osseous portion as well as the cartilaginous portion of the septum. For the purpose of correcting deformities of this portion of the septum as you may know, I devised a method of correcting it by means of fenestrated forceps.

One of the difficulties, as the Doctor has stated, is in overcoming the resiliency of the cartilage. In my experience this can not readily be overcome unless we correct the deformity at the osseocartilage junction. This is most easily *done by* means of the fenestrated forceps. If we attempt to force the deflection of the septum up to the median line with a flat bladed forceps we find it well nigh impossible to overcome the resistance, or re-fracture it at all, but by means of the fenestrated forceps, as I have indicated, you can force the deflection beyond the straight line as far as you choose. Thus you can refracture it without rotating the forceps and lacerating the septum. Some cases of brain abscess have been reported attributed to the laceration of the septum from the use of the flat forceps. With the fenestrated forceps this is entirely avoided. Dr. Gleason's ingenious method avoids this danger, but is especially adapted only to special cases where the deflection is confined to the cartilaginous portion of the septum.

Dr. F. J. Quinlan, New York City—We have been following an operation in the Polyclinic which saves much of the slough we have heretofore had in these cases. I will illustrate this. When we find, on one side, the angular deflection of bone, we introduce on the other side a solution of boric acid, as much as the tissues will hold, which causes a great sagging. We then push the deflection into the sagging and let it be. The injection is made between the folds of the mucous membrane, a saturated solution of boric acid being used, and then we produce a convexity on the side of the deformity that we wish to overcome, and thus we are able to retain the integrity of the mucous membrane. I have done this operation several times. By the method I have described we cause mutilation of the tissues on only one side. The mucous membrane is intact, which gives it an additional splint-like structure and holds the septum so as to prevent it swaying to the other side. I have had two or three sloughs following the method described by the Doctor.

Dr. Donne, Philadelphia—I would like to add my experience to the excellent results the Doctor has obtained. I have made the U-shaped flap he describes, and the operation is of value in those cases in which the cartilaginous septum alone is deflected. I wish Dr. Gleason would give us the benefit of his experience in septal deformity complicated by traumatic deformity of the external nose. But taking the main subject of his paper, namely, the description of his U-shaped incision, I am thoroughly in accord with what he says. In some cases I have found the operation of Asch or that of Adams or Roberts of more value, but in the cases with a broad base, where the U-shaped flap can be well made, the operation described by Dr. Gleason has been particularly successful. In these cases it is our duty to operate wherever we can induce the patient and the friends of the patient to consent, because many of the cases of middle ear disease are due to deflections of the septum, and we can often relieve headache and chorea and some cases of asthma by these operations. I am in favor of using general anesthesia in these cases. I use, locally, the extract of the suprarenal capsule to prevent excessive hemorrhage and give a better opportunity to see the progress of the operation. The use of general anesthesia is of value because it gives better control of the case, especially in children, who are easily frightened by the appearance of blood and instruments. I have had a number of those cases and no untoward results have taken place. Very frequently the use of the splint for twenty-four hours has obviated any hemorrhage either during the operation or subsequently. One of the particular advantages of the operation described by Dr. Gleason is the fact that the septum is then held in position by the other portions of the septum, and the tube does not need to be used over twenty-four hours, which is an advantage over the operations in which the tube must be used for a long time. The operation overcomes resiliency better than any other operation I have done.

Dr. E. B. Gleason, Philadelphia—I will say in reply to Dr. Roe that when a man or woman comes to me with a deviated septum I straighten it by my method whether the cartilaginous portion alone or both the cartilaginous and bony portions are involved. In the case I have presented quite a large portion of the bony part of the septum was involved. When the bone is involved far back it is sometimes much harder to make a long posterior crux with the knife. I generally use a double-edged knife, curved on the flat, for the purpose. In regard to the operation referred to by Dr. Quinlan as being done at the New York Polyclinic, it is an excellent one in those cases where only a very small portion of the septum is involved and where the length of the flap would entirely counteract the septal resiliency. In those cases where a large portion of the septum is involved the preservation of the mucous membrane interferes with the thorough bending of the flap and would be disastrous. I do not see any great advantage under any circumstances in saving the mucous membrane as has been described; and as one of the chief advantages of my operation over those employing triangular flaps is that it better counteracts the resiliency of the septum, the main cause of failure in septal operations; the mucous membrane of the concave septal surface is invariably incised in order to permit bending the flap as nearly at a right angle as possible. If the neck of the flap contains bone it breaks with an audible snap and the resiliency of that portion of the flap at least is entirely destroyed and gives no further trouble. Where the case is complicated by some deformity of the external bony framework it is a question for the patient to decide whether or not he wants an external operation done. You can secure good breathing space without an external operation.

Dr. Roe—In those cases in which you have a long bending of the septum extending from far back, if you were to cut a little segment in the middle and shove it through, the deformity would still exist. How do you do in those cases?

Dr. Gleason—I do not saw a little part out of the center, but I go entirely around the deflection. It makes no difference how large the deflection is. I have never seen a case where the pharyngeal edge of the septum was involved. I have never seen a case of deflection of the septum where, if I held the saw parallel with the septum, I would not saw around the deflection.

Dr. Roe—When there is a large deflection you would practically have to saw the entire septum.

Dr. Gleason—I have sawed two-thirds of the septum, and few cases will be found more extensive. But I would go further if I found it necessary. This case shows involvement of a large portion of the bony septum.

Dr. Quinlan—Do you put one or two tubes in?

Dr. Gleason—I use a large tube, which should drop in easily, and not be thrust in. If the slightest pressure is necessary to insert the tube the operation has been improperly done. The morning after the operation the tube is removed, and in rather more than 80 per cent. of my cases not again inserted. This was the history in the case brought before you. He visited my office every day for a week or so that I might inspect his septum, and in the meantime attended to his usual duties.

EXTENSIVE LACERATION OF THE EXTERNAL OCULAR MUSCLES; DIPLOPIA; SPONTANEOUS RECOVERY.*

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History of the Injury.—The patient was a practicing physician, aged 44 years, in good general health, and had never worn glasses. While riding a bicycle across his lawn at night, he ran into a blunt splicing hook of a clothes-line made of No. 10 telephone wire. The end of the hook entered the conjunctiva of the right eye, near the inner canthus, and tore its way out toward the external canthus, keeping below the cornea. The conjunctiva, subconjunctival tissue, and ocular muscle-tissue were extensively lacerated, and the end of the hook was found to be covered with blood, shreds of conjunctiva, subconjunctival tissue and fibers of muscle substance. The sclera was not perforated. The eye was dressed antiseptically and free boric acid irrigations were employed. Bleeding was quickly checked, and the wound healed kindly. However, there was immediate diplopia, which no prismatic combination tried by a local optician could relieve.

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Subsequent Diplopia.—I first saw the patient about four weeks after the injury. He came into my office wearing a black patch over the injured eye to prevent the diplopia, which was so annoying that, without exclusion of the right eye from vision, he was incapacitated for his daily duties.

The injured eye showed no signs of irritation; in fact, on first appearance it was apparently normal, but on closer inspection a faint conjunctival scar was seen, starting about 7 mm. below the cornea and to the nasal side of the insertion of the inferior rectus muscle, and extending in a straight line outward for about 2 cm. The field of rotation was not as much diminished as might have been expected, and the defect of motility seemed almost equally distributed. Compared with its sound fellow, the injured eye appeared slightly higher.

I endeavored to find a position of the head and eyes in which there might be fusion of the double images; and discovered that while sitting erect in a straight position facing a small circle of light about level with the eyes, by slightly lowering the chin, and rotating its point to the right, so that the head was inclined to the left at about an angle of 75 degrees, the patient had single binocular vision, that is, there was only one image of the light.

On moving the eyes downward from this point, there was immediate diplopia. The false image appeared lower and on the side of the uninjured eye—crossed diplopia—and the distance between the true and false images increased as the eyes were rotated further downward. When the eyes were directed downward and to the side of the injured eye, there was also an increase of the distance between the images. These findings were indicative of interference of depression and adduction of the right eye and pointed to injury of the inferior rectus muscle.

On rotating the eyes directly upward, the false image appeared higher on the side of the injured eye —homonymous diplopia—and the distance between the images increased as the eyes were further elevated. Still looking upward, and turning the eyes to the side of the uninjured eye there was also an increase of the diplopic separation. This suggested involvement of elevation and abduction of the right eye, and pointed to injury of the inferior oblique muscle.

Treatment.—The patient was quite anxious as to the advisability of operative treatment, which he had been told offered the best means of relief. I noticed that the slight exercise of muscles of the injured eye during the tests was causing an increase in the field of single binocular vision, and I instructed him to keep the blinder off the right eye until the next visit. By this time there was such diminution of the diplopia, that I was able to give him very satisfactory vision with a small amount of prismatic aid. Finally I urged a prolonged trial with a prismatic correction, thus exercising the disabled muscles, before proceeding to advancement. I corrected a small astigmatic defect, which brought vision up to 6/5 in each eye, and incorporated a 2 degree prism, base down, in the right lens, for distance use. This was very satisfactory so long as the eyes were not turned directly downward. For reading and other visual work at close range, I ordered a 4 degree prism, base down, incorporated in the right lens, and a 2.5 degree prism, base in, in the left lens, which also seemed quite satisfactory. After several weeks the patient complained of discomfort with the reading lenses. I wrote to him to try his distance lenses for close work, beginning with their use for short periods, and gradually increasing the length of time in reading with them. He was very soon able to dispense entirely with the reading glasses. Five months after the injury I saw him for the last time. The right eye appeared perfectly straight and level with its fellow. There was no diplopia except in looking directly downward. In the ordinary position of the eyes in reading, a 2 degree prism, base down, before the right eye, seemed to give perfect comfort. I ordered the full correction without any prismatic addition for distance and suggested a small presbyopic addition with a 2 degree prism, base down, right, in glasses for reading and other close work. Since then the patient has been quite comfortable, and except in reading often works without any glasses.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.*

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(Continued from page 573.)

If the subsequent history of the successful cases be considered, the operation is placed in a still more unfavorable light. Of the twenty-two recovering, three died later of pyelonephritis and two of uremia after implantation of the second ureter. The post-mortem in one of these revealed a fibrous condition of the kidney whose ureter had been implanted fourteen months before. No autopsy was secured in the second case, but from the similarity of symptoms it is fair to assume that the pathologic conditions were the same as in the first case. In one case it is noted that the kidney was destroyed through stenosis of its ureteral orifice.

Of the eleven surviving cases, there are five with one and six with both ureters implanted. Two of these cases (those of Evans† and Winiwarter) must be excluded from further consideration, because each has a fistula, opening, the one case in the loin, the other in the perineum, and differing only in degree from other intestinal cutaneous fistulæ. Martin's first case, one of exstrophy of the bladder, showed renal infection after implantation of one ureter, as shown by casts in the collected urine. The attempt to implant the second ureter failed, and presumably the urine still escapes over the pubes. In Boari's case, surviving six months with one ureter in the rectum, it is not stated whether urine still passes by way of the anus. The same criticism may be raised in Tuffier's case, which survived two years, with no signs of renal infection. This leaves one case, that of Chaput, which has survived unilateral implantation eight years. Chaput reports (Boari, *l. c.*) that three years subsequent to the operation the presence of urine could be demonstrated in the liquid evacuations. In the communication to me he states that after eight years there are about three liquid evacuations in each twenty-four hours. Evidently the discharges have not been examined with a view of ascertaining the condition of the kidney under consideration.

In one of the remaining cases (Peters') it is stated that as far as can be judged the strained urine is normal both in quantity and percentage of urea. This case has survived ten months with both ureters in the rectum. As far as can be ascertained no such examinations have

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* Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

† Died later.

the other cases, and we are left in doubt
lition of the kidneys.

hat a patient survives after the implanta-
ureter into the bowel should not be used as
t in favor of the operation, since there re-
functioning kidney, which can very readily
e. The supreme test of the operation lies
l implantation, and individual cases are val-
after the lapse of considerable time from the
ne operation, since marked kidney disease may
a time without the appearance of grave symp-

er's uretero-rectal anastomosis stands in a class
lf, and will be discussed in connection with my
xperimental work.

xperimental and clinical observations led Tuffier,
rly as 1890, to the conclusion that ascending renal
ction after uretero-intestinal anastomosis could only
prevented by the preservation of the ureteral orifices.
e suggested for exstrophy of the bladder the formation
f a vesico-rectal fistula by an incision in the septum separating the rectum and bladder and the suturing of the vesical and rectal mucosa. Catheters were then to be introduced into the ureters and carried out through the anus by way of the fistulous opening. By dissection of the exstrophied bladder wall a new bladder, smaller in size, was to be formed over the fistulous opening. Frank's operation of vesico-rectal anastomosis, performed by means of his coupler, is practically the same operation by a new technique.

In 1894 Maydl reported two cases of exstrophy of the bladder operated upon by an original method, consisting of the implantation of the vesical trigonum with its ureteral orifices into the sigmoid flexure. The predominant idea of this operation was the preservation intact of the ureteral orifices and their utilization as a means of preventing an ascending renal infection.

In order to ascertain whether this theory is borne out by clinical facts, thirty-six operations performed according to the technique laid down by Maydl have been collected, tabulated, and summarized.

I have ventured to make use of the term "uretero-trigono-intestinal anastomosis" as descriptive of the operation of uniting the vesical trigonum with its ureteral orifices to the intestinal tract.

SUMMARY OF 36 CASES OF URETERO-TRIGONO-INTESTINAL ANASTOMOSIS.

Number of operations		36
Number of operators		16
Operation performed for exstrophy of the bladder		32
Epispadias without exstrophy		2
Exstrophy and adenoma of bladder		1
Incontinence caused by funnel-shaped urethra		1
Sex mentioned in		36
Males	30	
Females	6	
Age noted in		31
Average age		12 3-5
Oldest		35
Youngest		3
Recovery in		31
Number of deaths		5
Percentage of recoveries		86
Percentage of deaths		14
Deaths occurring four and fifteen months later of pyelonephritis		2
Mortality including these cases		19 per ct.
Implantation site mentioned in		35
Implanted in sigmoid		33
Implanted in rectum		2
Rectal drainage-tube used in		21
Sphincteric control over urine mentioned in		29
Referred to as satisfactory in		24
Occasional involuntary evacuations at night in		4
Sphincteric control referred to as poor in		1
Average fr[illegible]		every 4-5 hours.
Lumbar pai[illegible] transitory, noted in		5
Fistulæ aft[illegible]		6
Number of [illegible] end of 1 year		19
Number of cases living and well at end of 2 years		10
Number of cases living and well at end of 3 years		7
Number of cases living and well at end of 4 years		4
Number of cases living and well at end of 6 years		1
Number of cases living and well at end of 7 years		1

The mortality in the thirty-six operations is surprisingly low when it is considered that it is a difficult major operation, and that the list includes the first cases operated upon before the technique had been perfected.

When we compare this mortality with the 33 per cent. mortality accompanying ureteral implantation without the preservation of the ureteral orifices, we are forced to conclude that the explanation lies in the intrinsic dangers of the latter operation rather than a lack of skill on the part of the operators. Without the vesical ureteral orifice eleven deaths in thirty-three cases from rapidly progressive renal infection; with the ureteral orifices intact, five deaths out of thirty-six cases; two, at least, not being due to infection. Unfortunately, we have no detailed description of the causes of death in v. Eiselberg's three fatal cases, except that two died after one and five days.

Only two cases have died from ascending infection, and one of these (Schnitzler) was operated upon extraperitoneally and not according to the technique laid down by Maydl.

Since the operation is applicable chiefly to cases of exstrophy of the bladder, and the majority of cases of this anomaly occurs in males, one would expect the proportion found, of thirty males to six females.

The sphincteric control over the urine is remarkably good, it being reported as poor only in one case.

The six fistulæ resulted, in some of the cases at least, from timidity on the part of the operator to trust to his suturing and to the employment of gauze drainage. They are all reported as eventually closing.

The noting in five cases of gradually disappearing lumbar pains would suggest a possible renal infection from which the patient slowly recovered. It may be more than a coincidence that in one of these cases (Herzel) where lumbar pain was noted, there was subsequent polyuria, a condition nearly always present in chronic interstitial nephritis. However this may be, the number of cases (ten) living and without apparent signs of renal infection, after the lapse of two years shows that renal infection, if present, can not be very severe.

The primary and secondary results of uretero-trigono-intestinal anastomosis are so much superior to those of ureteral implantation without the preservation of the vesical ureteral orifices as to demand always the performance of the first operation in preference to the latter.

In order to cover the entire field of uretero-intestinal anastomosis it only remains to consider the cases where union has to be attained by the formation of fistulæ between the bladder and rectum.

This was first attempted by Loyd in 1851.

LLOYD,[74] 1851. *Exstrophy of bladder; formation of vesico-rectal fistula; death on the sixth day from peritonitis.* October 3, 1851, Loyd operated upon a male, aged thirty years, for exstrophy of the bladder and separation of the os pubis and epispadias. A skein of thread was passed through bladder and rectum and out of anus. Although the silk was removed on the sixth day the patient died soon after of peritonitis. At the autopsy it was found that the thread had passed through the peritoneum, which in this case was reflected low down in the pelvis.

JOHNSON,[72] 1852. *Exstrophy of the bladder; vesico-rectal anastomosis; death from peritonitis.* Johnson performed vesico-rectal anastomosis by Loyd's method on an infant suffering from exstrophy of the bladder. Death resulted in a short time from peritonitis.

HOLMES,[71] 1863. *Exstrophy of the bladder; vesico-rectal fistula by means of pressure necrosis; failure.* Holmes, in a boy with exstrophy of the bladder, endeavored to establish a free communication between the bladder and rectum by special

TABULATED LIST OF THIRTY-SIX CASES OF URETERO-TRIGONO-INTESTINAL ANASTOMOSIS (MAYDL'S OPERATION).

No.	Date.	Operator.	Conditions Demanding Operation.	Sex and Age.	Operative Result.	Site of Anastomosis.	Rectal Drainage Tube.	Sphincteric Control.	Remarks.
1	Nov. 3, 1898.	Allen, D. P. (51)	Exstrophy of bladder.	M., 15	Recovery.	Sigmoid.	Yes. .	April 6, 1900, retains his evanuations from 5 to 7 hours.	Personal communication from Dr. Allen, April 6, 1900. Patient occupies position as dry-goods clerk.
2	 1894	Bergenhem, B. (52)	Exstrophy and adenoma of bladder.	M., 35	Recov.	Rectum..	" .	1¼ years after operation evacuations are every 5 to 6 hr. during the day; twice at night	Attends regularly to business and appears to be in good health.
3	Feb. 21, 1896.	v. Eiselsberg, A. (53)	Exstrophy. . .	M., 31	"	Sigmoid.	" .	3 months after operation retains urine 6 to 7 hours; 3 years afterward perfectly continent.	Twelve days after operation slight infiltration of urine through incision; completely disappeared 6 days later; transitory pains in lumbar region. Well Jan. 23, 1899.
4	July 30, 1896.	v. Eiselsberg, A. (53)	" " . .	M., 8	"	" "	" .	2½ years after operation soils the bed at night, but is continent during the day.	No pain in lumbar *regions*; abdominal fistula shortly after operation, discharging urine and feces; soon closed. Well April 3, 1900.
5	July 18, 1898.	v. Eiselsberg, A. (53)	Epispadias. . .	M., 6	"	" "	.	6 months after opera. sphincter control good.	Epispadias had resisted all other modes of treatment. Well Nov. 1, 1898.
6	Nov. 11, 1898.	v. Eiselsberg, A. (53)	Exstrophy. . .	M., 12	"	" "	.	. . . .	Well April 3, 1900.
7	Nov. 11, 1898.	v. Eiselsberg, A. (53)	" " . .	M., 8	Death.	" "	. . .	. . . .	Died in five days.
8	June 14, 1898.	v. Eiselsberg, A. (53)	" " . .	M., 6	"	" "	. . .	. . . .	Died next day.
9	Oct. 19, 1898..	v. Eiselsberg, A. (53)	Incontinence due to funnel-shap'd urethra	F., 11	"	" "	. . .	. . . .	Died Nov. 11, 1898.
10	Sept. 14, 1896.	Ewald, Carl (54)	Exstrophy. . .	M., 5	Recov..	" "	No. . .	Urine passed involuntarily for a few days only; 2 years afterward evacuations every two hours during day; sleeps 10 hours at night.	No infectious renal symptoms two years after operation. No casts, 1900.
11	 1898	Ewald, Carl (54)	Epispadias. . .	M., 3	"	" "	. . .	Some incontinence while patient was in bed; function reestablished when he began to walk about.	
12	June 28, 1898.	Frank, Rudolf (55)	Exstrophy. . .	M., 16	"	" "	Yes. .	2 months after operation once in 5 hours; sleeps the whole night.	For two or three days bloody urine.
13	Oct. 31, 1898..	Frank, Rudolf (55)	" " . .	M., 16	"	" "	" .	3 to 5 hours during day; 2 to 3 times at night.	For a month leakage of urine through abdominal incision. Well Jan. 12, 1900.
14	May 25, 1897..	Herczel, Emil (56)	" " . .	M., 5	"	" "	" .	2¼ *years after operation* 6 *to* 7 hours; oftener at night.	One *month after operation polyuria* which lasted four months; shortly after operation had an attack of pneumonia, during which he suffered pain in lumbar regions; 2¼ years after operation polyuria still exists.
15	Dec. 20, 1897.	Herczel, Emil (56)	" " .	M., 25	"	" "	" .	6 months after operation every three hours, but sometimes involuntarily at night.	
16	Mar. 9, 1899.	Herczel, Emil (56)	" " .	M., 11	"	" "	" .	1 month after operation 5 to 6 hours; involuntarily at night.	
17	Apr. 23, 1895..	Kryński, L (57)	" " . .	M., 24	"	. . . .	. .	Continence could be more satisfactory.	
18	June 19, 1892.	Maydl, K. (58)	" " . .	M., 20	"	Sigmoid	" .	Good control; able to work.	Pain in lumbar regions; urine bloody for few days. Living in 1899
19	Oct. 1, 1893...	Maydl, K. (58)	" " . .	F., 12	"	" "	" .	Every three hours and the entire night.	Leakage of urine for short time through the abdominal incision; no renal infection. Living in 1899.
20	Jan. 2, 1895.	Maydl, K. (59)	" " . .	M., 7	Death..	" "	" .	. . . .	Died next day of shock.
21	Jan. 20, 1895.	Maydl, K. (59)	" " . .	F., 22	Recov..	" "	" .	2 weeks after operation every 7 hours.	Pain in lumbar region. Well in 1899.
22	Nov. 23, 1895.	Maydl, K. (59)	" " . .	F., 7	"	" "	" .	6 mo after operation every 4 hr.	No trace of renal infection. Well in 1899.
23	July 2, 1897. .	Maydl, K. (60)	" " . .	M., 4	"	" "	" .	3 wk. after opera. every 4 to 5 hr	No signs of renal infection. Well in 1899.
24	Nov. 29, 1897.	Maydl, K. (60)	" " . .	M., 7	"	" "	" .	Satisfactorily.	Abdominal urinary fistula which closed later. Well in 1899.
25	Mar. 24, 1898.	Maydl, K. (60)	" " . .	M., 14	"	" "	" .	3 to 4 hours in daytime; once at night.	One month after operation examination of urine shows no albumin. Well in 1899.
26	June 20, 1898.	Maydl, K. (60)	" " . .	M., 7	"	" "	" .	Satisfactory.	Well in 1899.
27	Nov. 20, 1898	Maydl, K. (60)	" " . .	M. 4½	"	" "	"	1 month after operation 5 to 6 hours.	Well in 1899.
28	 1895	Mikulicz, T. (61)	" "	M., 28	"	Rectum .	. .	Very unsatisfactory.	Death 4 mos. later from pyelonephritis.
29	Feb. 24, 1899.	Nové Josserand, G. (62)	" " . .	M., 5	"	Sigmoid	No. . .	At first incontinence; 1½ mos. after operation, 6 to 10 evacuations in 24 hours,	No sign of any renal infection. Doing well May 17, 1899
30	March, 1897..	Park, R. (63)	Exstrophy and other congenital defects.	M., 4	Death..	" "	" . .	. . . .	Died 55 hrs. after operation; could not be nourished per rectum because of congenital defect; no sign of *peritonitis.*
31	 1896	Rosegotti. (64)	Exstrophy. . .	M., 9	Recov..	" "	. . .	3 months after operation evacuations are 6 to 8 times in 24 hours.	
32	Jan. 27, 1895..	Schintzler. (65)	" " . .	M., 25	"	Rectum..	No. . .	. . . .	[illegible] 1¼ yr. [illegible] rom [illegible] defect. Post *mortem* showed well-advanced pyelitis.
33	 1896	Trombetta. (66)	" " . .	M., 10	"	Sigmoid	. . .	2 to 3 hours in daytime; 3 to 4 times at night.	
34	Feb. 12, 1898	Tuffier, T. (67)	" " . .	M., 15	"	" "	No. . .	4 months after operation 5 to 6 passages in 24 hours.	No signs of intestinal *inflammation.*
35	Dec. 26, 1895.	Wolfler. (68)	" " . .	F., 9	"	" "	Yes. .	After 6 weeks can retain her urine 6 hours; 1½ years after operation 5 to 6 times in 24 times; occasionally soils bed in sleep.	1½ years after operation no signs of renal infection.
36	Jan. 16, 1897..	Wolfler. (68)	" " . .	F., 8	"	" "	" .	1¼ years after operation every 2 to 3 hours; once at night.	Well 1½ years after operation.

screw forceps, which, placed *in the rectum* and bladder, destroyed the intervening tissue by pressure necrosis. The attempt failed, for although the urine passed into the bowel in considerable quantities, a good portion of it still continued to escape above the pubis. So much pain was produced that the rectal opening was allowed to close.

Rose,[77] 1872. *Vesico-vaginal fistula transformed into a vesico-vagino-rectal fistula; death from uremia ten months after operation.* Rose operated upon a woman whose vesico-vaginal septum had been almost destroyed by diphtheritic ulceration. He made a fistula opening 2 cm. above the anus and about 2 cm. in width in the recto-vaginal septum, and prevented contraction by suturing the mucous surfaces of rectum and vagina. The edges of the freshened surfaces of the labia were sewed together and the vagina closed. The patient was able to control the liquid stools, which she passed per anum every two or three hours. She died ten months after the operation from uremia, the nephritis having its origin in the previous attack of diphtheria. The vagina, bladder, and rectum were found perfectly normal.

Keen,[73] 1875. *Vesico-vagino-rectal fistula following typhoid fever; closure of introitus; well twenty-two years afterward.* A woman aged thirty-four, had been left with a vesico-vagino-rectal fistula from severe sloughing after typhoid fever. After a number of unsuccessful plastic operations for the closure of the fistulæ the entire vulvar aperture was closed. The patient defecated, menstruated, and micturated entirely by the rectum. Micturition occurred only five or six times during the day and once or twice at night. The feces did not pass into the bladder. Eleven years subsequent to the operation a calculus was removed from the vagina, with recovery in three or four days. With the exception of the formation of a small fistula, which closed spontaneously, the subsequent history of the patient was entirely satisfactory. Twenty-two years after the operation she remained in perfect health, with no sign of renal infection.

Thiersch,[78] 1881. *Exstrophy of the bladder; formation of recto-vesical fistula; well after eight months.* The patient was a child with a severe exstrophy of the bladder, together with a defective vagina and a bicornate uterus. A communication was made between a newly formed bladder and the rectum through repeated applications of a Samson's bowel-clamp, which produced a necrosis of the recto-vesical septum. The patient recovered, and although she had been passing all the urine per rectum for eight months at the time the case was reported, there was no rectal irritation or excoriation of the parts near the anus. The bladder remained clear of feces.

Novaro,[75] 1890. *Exstrophy of the bladder; formation of a vesico-rectal fistula and new bladder; recovery; operation a failure.* Novaro, in a girl, aged three, suffering from exstrophy of the bladder, exposed the anterior wall of the rectum by a semilunar incision at the inferior border of the vaginal orifice. By a plastic operation he united the dissected wall of the bladder to the rectum, which had previously been opened 12 to 15 cm. The raw surface of the bladder was covered in by the freshened labia majora. The edges of the flap sloughed and allowed the urine to escape over the pubes. At the time of the report Novaro intended to form a cloaca by a supplementary plastic operation.

Tuffier,[79] 1891. *Formation of recto-vesical fistula; partial success.* Tuffier established an artificial recto-vesical fistula with partial success, a fissure remaining which he intended to close later. The patient remained well. The urine passed by way of the rectum, could be held ten minutes.

In the 1899 edition of Duplay and Reclus, Tuffier, while mentioning the technique, does not report the case or give its subsequent history.

Resegotti,[76] 1895. *Exstrophy of the bladder; formation of vesico-vagino-rectal fistula and closure of introitus; death from pyonephrosis.* By a plastic operation in a case of exstrophy of the bladder, Resegotti formed a bladder out of the abdominal wall and the labia majora and minora. An artificial vesico-vagino-rectal fistula was then made and the introitus closed. Complete continence ensued, the urine being passed voluntarily per anum every two or three hours. Double pyonephrosis soon developed, from which the patient died. Resegotti condemns the formation of communications between the intestine and the urinary tract.

Gallet,[69] 1896. *Formation of recto-vaginal fistula and closure of introitus; success.* A case is briefly mentioned by Gallet where, for a vesico-vaginal fistula, he closed the vagina and made an opening in the vagino-rectal septum. The patient did well and was able to control the urine two hours.

Halstead,[70] 1900. *Exstrophy of the bladder; vesico-rectal anastomosis with the Frank coupler; death from shock.* Through the kindness of the operator, I am permitted to report the following unpublished case:

The patient was a boy aged 5 years, suffering from exstrophy of the bladder and other congenital defects. Jan. 9, 1900, the abdominal cavity was opened and the sigmoid attached to the serous surface of the posterior aspect of the ectopic bladder wall by sero-serous quilted sutures. The bladder-wall was next incised 1.75 cm. in a longitudinal direction just above the ureteral openings, and one-half of a Frank coupler introduced. The other half of the coupler was inserted into a longitudinal incision in the sigmoid. The adjacent edges were united by a series of quilted sutures. By a plastic operation a new bladder was formed over the coupler and the defect in the abdominal wall nearly closed. Child urinated several times during night through rectum. Died at the end of sixteen hours of shock. The post-mortem showed no evidences of peritonitis. No escape of urine through sutured bladder-wall. Rectum contained nearly one ounce of urine. Right heart dilated.

It is unjust to include the cases of Loyd, Johnson, and Holmes in any consideration of vesico-rectal anastomosis as a treatment for exstrophy of the bladder, since the methods employed were exceptionally crude. The same may be said of Thiersch's case, although the patient was well at the end of eight months.

Halstead's case, where Frank's technique was employed, demonstrates the operation to be perfectly applicable to human beings. Frank's interesting experiments have shown that in dogs vesico-rectal anastomosis is a comparatively safe procedure; that the bladder remains free of feces, and that infection of the kidneys does not result in some of the cases operated upon. These findings are confirmed by the results of my own experimental work, which show that whenever the ureteral orifice is left intact, for a certain time there may be freedom from infection, even where that orifice continually comes in contact with virulent micro-organisms.

Of the five dogs reported on by Frank, the first three were examined fifteen, four and sixteen days respectively after the operation. The first two showed signs of renal infection, but the third showed two small foci of round-celled infiltration. The other two dogs were killed and examined twenty-seven and ninety-one days after the operation. In both cases there were unmistakable evidences of ascending renal infection. In other words, the longer time elapsing after the operation the more changes resulted in the kidneys.

How great this infection will be and to what extent the animal can overcome its infection can only be shown by allowing the animals to live a longer time before making the examinations. This Frank promises to do, and the results will be watched with great interest. The burden of proof, however, remains with him to show that renal infection after his operation is impossible or at least rare. Until such proof be forthcoming Frank's prediction that vesico-rectal anastomosis will become more popular than gastro-enterostomy will hardly be fulfilled. The question of infection must be definitely settled before other virulent micro-organisms are given admittance to a bladder already handicapped by disease.

(To be continued.)

Clinical Reports.

ACUTE TEMPORARY DILATATION OF THE HEART ACCOMPANYING THERMIC FEVER.

REPORT OF TWO CASES.

C. F. CLOSE, M.D.

CHICAGO.

Acute dilatation of the heart has been described as occurring under various conditions, chiefly as a result of excessive physical exertion. So far I have found no report of a case in connection with sunstroke or heatstroke—*Hitzschlag,* as the Germans more exactly express it. The following two cases occurred during the excessively hot weather of the past summer.

Case 1.—A male, aged 17, born in America, of Danish parentage, and a photographer's assistant, had always been healthy. There was no constitutional disease in the family. The patient's occupation compelled him to work under a partially unprotected skylight the greater part of the day, where the heat was very intense. I was summoned soon after the attack of sunstroke, and found him suffering with the usual symptoms:

high temperature; rapid, feeble pulse; headache and dizziness; marked congestion of the vessels of the head and neck. He did not lose consciousness. The heart was found to be greatly enlarged in all its dimensions, but especially to the right, reaching to the right border of the sternum. The pulsations were very noticeable in the epigastrium just below the arch of the ribs. The sounds were very low and somewhat indistinct. A mild systolic murmur was heard over the tricuspidal valves. Under the ordinary treatment—recumbent position with elevation of and ice compresses to the head; cathartics, etc.—he recovered rapidly, and ten days afterward the heart had subsided to its usual, *normal*, boundaries.

Case 2.—A female, aged 23, unmarried, an American of German parentage, worked as teacher for a sewing-machine company, her business being to go from house to house where machines had been sold, and instruct the inmates in their use. This necessitated her being out the greater part of the day. During one of these trips she was overcome, on the street, by the heat and lost consciousness. When I arrived she complained of great dizziness, pain in the head, and was somewhat dyspneic. She presented practically the same symptoms as the preceding patient, and had been under my care some time before for catarrhal bronchitis, etc., so I was quite familiar with her condition, and the result of the examination of the heart was a great surprise to me. Formerly it had been absolutely normal, but now I found the dulness increased in all directions, but chiefly to the right as before, reaching slightly beyond the middle of the sternum. The sounds were somewhat muffled, but no murmurs. The pulse was rapid, and of low tension. As before, the patient recovered gradually, though not so rapidly. In two weeks the heart had gone back to its former dimensions, and aside from some dizziness and sensitiveness to the sun, she was as well as ever.

I have been able to keep both of these patients under observation since the attacks, and neither has shown any symptoms of "weak heart" since, nor had they before. Both are actively employed at work which throws some strain on the heart. I am inclined to believe that the cause of this acute dilatation may be looked for in the nervous system, and that it is a part of the general muscular relaxation the result of profound shock. Added to this we have a general venous congestion which especially overtaxed the right ventricle.

4707 Evans Avenue.

RUPTURE OF THE MEMBRANA TYMPANI FROM INDIRECT VIOLENCE.

WITH CONCUSSION OF THE LABYRINTH AND COMPLETE DEAFNESS.

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On Oct. 29, 1900, there came to my service at the East End Dispensary, a negro man, aged 23, with the following history: At two o'clock in the afternoon of October 28, a man had slipped up behind him and struck him a heavy blow on the right side of the head with a wagon-wheel spoke. For at least a half hour following this he lay senseless, and when he came to and arose to his feet he felt, as he described it, "foolish." Blood was flowing from his right ear and likewise from his mouth. This discharge of blood continued at intervals for some time. The evening of that day he had, as he judged from his sensations, a high temperature.

When I saw the patient on the afternoon of the day following, I found the drum membrane of the right ear to be in this condition: The entire membrane, with the exception of the membrana flaccida, was congested, it being especially red along the lower border, this probably being due to blood stasis in this portion of the membrane. The handle of the malleus was even more congested than the surrounding membrane. In the posterior half of the membrane was a perforation running for almost two-thirds of its diameter. This perforation was not gaping, and was *perfectly straight.* Bone and air conduction were both entirely absent, the patient being completely deaf in this ear. There was no tinnitus. I append a drawing of the injured membrane.

After cleansing the ear, I inserted a strip of iodoform gauze, and instructed the patient to go home, remain quiet, and return the next day.

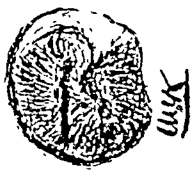
The following morning he again presented himself, and stated that the night before he had again experienced the sensation of high temperature, and continued to spit blood. After cleansing the ear I found that the discharge of blood from the wounded membrana had ceased. There was still, however, *total inability to hear in this ear.* The patient desired to go to work, but was instructed to return home and to refrain from any unnecessary physical exertion.

When next seen, on November 2, the perforation in the drum had entirely healed. Deafness was as marked as ever. He at intervals had continued to spit blood.

At this writing—November 20—the patient has returned to work with a practically perfect drum, but is still stone deaf in the affected ear. The expectoration of blood has wholly ceased.

Although cases of traumatic perforation of the membrana tympani from both direct and indirect violence are not of great rarity, still there are some features of this case which render it of more than passing interest.

As one of these, may be mentioned the continued expectoration of blood, and high temperature, which might lead one to believe that in this case there was a fracture of the base of the skull. The manner and force with which the blow causing the injury was used would also lead to the opinion of a graver lesion. But this has been excluded, I should think, by the subsequent history of the case. Another interesting feature is the evident concussion of the labyrinth, with marked and permanent deafness following. But the most unusual and peculiar feature to me in this case was the fact that the rupture of the drum occurred in transverse relationship to the fibers of the membrana, and was perfectly straight and not oval and gaping as usually is the case in lesions of this membrane from indirect violence.



It is unfortunate, as concerns the hearing, that the therapeutic resources of the aurist do not permit him to close his reports of such cases as this with the gratifying words *restitutio ad normalem.*

Lyceum Building.

Intrarectal Urethra for Exstrophy of the Bladder.—Soubbotin, of St. Petersburg, has cured a case of exstrophy of the bladder by a method described, in the *Semaine Méd.* of January 23, as extremely satisfactory in the one case in which he has had occasion to use it. Through a Kraske posterior incision the rectum is isolated from the side and two longitudinal incisions made in it. The fundus of the bladder is manipulated so as to bring the ostium of the urethra into one of these slits, where it is sutured. Two longitudinal incisions are then made below this point to the anus, and the edges of the flap thus obtained are sutured together above, thus providing a tube running from the urethral sphincter to the anus—an intrarectal urethra with its own sphincter and the anus intact below.

EXSTROPHY OF THE BLADDER.

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[*Awarded Senn Medal at the Fifty-First Annual Meeting of the American Medical Association, June 6, 1900. Received by the Committee, March, 1, 1900.*]

EMBRYOLOGY.

Before considering a congenital deformity of the bladder, it will be advisable to review briefly the embryological development of the genito-urinary system, and, of necessity, the embryo as a whole.

The ovum, a single cell with a single nucleus, soon after impregnation becomes, by karyokinesis, a mass of cells resembling in shape and appearance a mulberry, hence the name, morula. A clear fluid next accumulates in the center of this mass of cells; at first small, but gradually increasing in amount. Thus, the morula is converted into a globular vesicle, termed the blastodermic vesicle, the wall of which is at first composed of a single layer of cells—ectodermal, but later, a second layer of cells—entodermal—is completed. This double layer of cells is termed the blastoderm.

The first result of the segmentation of the ovum is the formation of the blastoderm and the disposition of its cells into the embryonic layers. At this time is seen the development of the area germinativa or embryonal area, by the accumulation of cells at a limited point on the inner surface of the blastodermic membrane. It is from this area alone that the body of the embryo is developed. The remainder of the germ forms what is termed the extra-embryonic structures, such as amnion, chorion, and yolk sac. In this germinal area there is seen an opaque line called the primitive streak. In the streak develops a groove, the primitive groove, bordered by two ridges, which will become dorsal plates, and, ultimately uniting, inclose a cylindrical space, the tubus medullaris, or the nervous system.

On cross-section, at this point, there will be seen a marked accumulation of cells between the ectoderm and entoderm, most noticeable on each side of the anterior extremity of the primitive streak. This is the third germ layer, the mesoderm.

The mesoderm at an early stage consists of four parts, two on each side: one near the medial line called the paraxial mesoderm—primitive segmental or vertebral plate—and a lateral plate on each side. The paraxial mesoderm undergoes transverse division into cubical masses, called mesoblastic somites or primitive segments. The lateral mesoderm splits into two layers: 1, outer-parietal or somatic mesoderm; and 2, inner-visceral or splanchnic mesoderm. The somatic mesoderm uniting with the ectoderm is called the somatopleure. The splanchnic mesoderm uniting with the entoderm is called the splanchnopleure.

The cavity existing between the splanchnopleure and the somatopleure is the celum, body-cavity, or pleuroperitoneal cavity, which will ultimately become subdivided into the great serous cavities of the body—pericardial, pleural and peritoneal. The germ, or germinal area, at this stage of its development, has the shape of a hollow sphere or vesicle. The differentiation of its cells into epiblast, endoblast, and mesoblast, has taken place. The foundation for every structure of the body is well under way and in tangible shape. The further growth and development consists chiefly in an unequal growth of the different parts; in evaginations and invaginations; the furrowing and constricting off, of certain areas.

In considering the further history of the development of the embryo, the mesoblast alone will be considered, excluding the other structures, because of their lack of close connection with the subject. The primitive segments are intimately associated with the development of the spinal column and muscles of the back; hence they will not be included in this review. The lateral plates have split into the somatopleure and splanchnopleure, between which is the celum or body cavity. The future development of these two structures is of paramount importance in an effort to arrive at a thorough understanding of exstrophy of the bladder.

In the earliest stage, the embryo lies flat on the surface of the yolk, as a watch-glass, and is not distinctly differentiated from the adjacent blastoderm. The cavity of the germ is one undivided space. But there soon appears the head-fold and tail-fold, and likewise similar lateral folds as if by an invisible constricting band which was gradually drawn tight until the large single cavity of germ has been divided into two spaces of unequal size. The smaller, or intra-embryonal portion formed the gut-tract, and the larger, or extra-abdominal division constituted the umbilical or vitelline vesicle, or yolk-sac, these two cavities uniting at a point which is to become the umbilicus and communicating by means of a short canal, the vitelline or omphalo-mesenteric duct. These lateral downward folds of blastoderm are called visceral plates, and consist of the splanchnopleure internal and somatopleure external. The splanchnopleure descends from each side, meets in median line and, coalescing, it pinches off a portion of the yolk-sac, which is to become the gut-tract and is enclosed in the body cavity by the descending and coalescing walls of somatopleure. Hence the splanchnopleuric fold outlines and forms the intestinal canal. The somatopleuric layer, which accompanies or rather follows the splanchnopleure, constitutes the lateral and ventral body wall of the embryo, by fusion in the median line, except, of course, at the umbilicus. Failure of these somatopleuric folds to unite in the median line is the cause of various deformities, not the most infrequent of which is exstrophy of the bladder.

The allantois must be considered, as it is from this embryological structure that the bladder is formed. It is an evagination of the splanchnopleure, the gut-tract, the same as is the pancreas, liver and lungs. It sprouts from the hind gut, at about the same time that the amnion is being developed; it is, at first, solid and pear-shaped, but soon becomes vascular and membranous. It projects from the body, through the imperfectly closed anterior abdominal wall, into the cavity of the amnion and into contact with the false amnion, where, by uniting with the vascular system of the mother, the placenta is developed.

Bischoff, Reichert, Remak and others, claim that the allantois is of double origin, arising as two separate and distinct columns of cells, either solid or hollow, from the neighborhood of the Wolffian body, and soon coalescing. This order of events has been observed in some of the lower animals, but not in man. A human embryo of three weeks has been described, with a perfect single allantois. The allantois is the chief agent of the early circulation; it contains two arteries and two veins. The arteries are, at first, branches of the abdominal aorta, but subsequently, when the primary aortæ coalesce, they become branches of the hypogastric arteries.

In the mammals, the extra-embryonic portion of allantois contains no cavity. At about the third month it is no longer of use and its extra-embryonal portion becomes the umbilical cord, its vessels becoming umbilical vessels.

Its intra-embryonic portion is divided into three subdivisions: 1. The upper, the urachus, at birth is an atrophied cord extending from fundus of bladder to umbilicus. 2. The middle third becomes the urinary bladder. 3. The lower third becomes, in males, the first part of urethra; in females, the entire urethra. The proximal portion of the allantois, that is, the part intervening between bladder and intestine, is designated as the "sinus urogenitalis," while the caudal end of intestine, which is in effect a pouch in which both allantois and intestine terminate, is known as the "cloaca."

During the sixth week there appears on the surface of body, in the region corresponding to position of the cloaca, the cloacal depression, or proctodeum, which extends upward, forming the communication between gut—entoderm—and skin—ectoderm.

In amphibia, reptiles and birds, also in the lowest mammals, the monotremata, the cloaca is a permanent structure. In all mammals, except the monotremata, the cloaca undergoes division into a posterior or anal canal and an anterior or urogenital aperture, opening independently on surface of body; the latter in the female is the short urethra and fossa of vestibule, and in the male is the prostatic portion of urethra. This division is brought about by three folds, one from each side and one from the point of union of urogenital sinus and intestine. These folds coalesce about the tenth week and at the time of birth constitute the perineum.

The embryology of the ureters must also be considered, not only because of their intimate relationship to the bladder, but also on account of their participation in the most modern methods of treating deformities and certain diseases of the bladder. The ureters spring from the lower end of the Wolffian duct, as an evagination or budding, just before it enters the cloaca. The Wolffian duct is the first trace of the urinogenital apparatus to appear in the embryo. At first, it is a longitudinal column of cells, situated between the vertebral plates and the lateral plates and soon becomes hollow, its hind end uniting with and opening into the cloaca. Its upper end is connected with the pronephron and mesonephron, and is not open. Both of these organs, in mammals, disappear before birth, and the Wolffian duct becomes, in males, the vas deferens, and in females, a remnant known as Gärtner's ducts. The ureter springs as a bud from the Wolffian duct, ascends through a mass of mesoblastic tissue, called metanephric blastema, to the metanephron, or permanent kidney. Here, collecting-tubules from the ureter grow out and become continuous with masses of cells of the metanephric blastema, which then differentiate themselves into kidney tubules. At first, the ureter and Wolffian duct communicate by a common opening, with the intestine, so forming a cloaca, but this state of things lasts for a short time only. Owing to alterations brought about by processes of unequal growth the orifices of the ureters subsequently change their position, so as to open separately into the urogenital sinus, and still later by the further operation of the same agency, they come to open into the bladder, on its dorsal wall, thus gradually assuming their permanent location.

This cloacal stage of the development of the excretory apparatus has its counterpart as a permanent and normal structure in some of the lower animals. It has been held as a general principle that the higher animals, in the course of their embryological development, repeat, to a greater or less extent, the form of the lower members of the class to which they belong. This principle is well brought out by Gadow, in his work on "The Cloaca and Copulatory Organs of the Amniota." He describes in detail these organs in the crocodilia, sauria, ophidia, aves, chelonia, monotremata, marsupialia and placentalia. He shows the gradual tendency toward the separate openings: one for the fecal current, and another for the genito-urinary secretion, as is found in man. It will be seen from his work that the natural cloaca is quite different from the artificial cloaca, as made by surgeons after implanting the ureters into the rectum.

In the animals in which it exists naturally the cloaca is subdivided into three compartments: 1, proctodeum, or external portion; 2, urodeum, or middle portion, urogenital; and 3, coprodeum, or inner portion, the fecal pouch. The middle segment, urodeum, is separated from the division above and below by folds of mucous membrane which do certainly serve as more or less of a protection. The ureters open at the summit of a papilla, and in many instances there exists a receptacle similar to a bladder, which communicates with the rectum. From this it will be seen that the kidneys are protected much more perfectly in these cases than are the same structures in man when the ureters are made to communicate artificially with the rectum. Then also, the consideration of the normal cloaca may evolve a solution of the question: "As some of the lower animals, and birds, have the bladder and rectum in one cloaca, why can not human beings live comfortably in the same condition?"

In attempting to answer this question, there are many explanations which might be advanced, all of which are lacking in the one essential, that of being conclusive. The urine of these animals might be antiseptic. The feces of these animals might be sterile or non-infectious. But that such is not the case has been demonstrated conclusively. Or, it might be said that, owing to the traumatism accompanying the implantation of the ureters into the rectum, the manufacturing of a cloaca, a *locus minoris resistentiæ* is established, which renders the danger of infection of these parts more likely to occur—a condition that is never present in a natural cloaca.

Van Hook answers this question, and says: 1. The urine of birds is very slightly moist; hence it can not mechanically carry bacteria to the kidneys, as is the case with fluids. This point is not of practical importance, as micro-organisms extend into solid as well as liquid media. Also, infection has not followed in animals with a natural cloaca where the urine is liquid. 2. Birds' ureters are supplied with mucous membrane, evolutionarily accustomed, as it were, to contact with infected solids and fluids. This seems to be the only rational explanation, and it also explains the fact that the liver, pancreas, salivary glands, the middle ear and Bartholin glands do not, as a rule, become infected from the more or less septic canal into which they open.

MALFORMATIONS.

Those organs which are placed in the median line of the body are more subject than the extremities to certain deviations from the normal development. The structures which have a more complicated mechanism and those which are formed latest in the stage of development of the embryo, are naturally more apt to be interfered with than those the formation of which is more simple and earlier in the history of the fetus. The bladder is formed late, and owing to its position in the median line—this being formed by the fusing of the visceral plates, which are comparatively complicated and also late in development—is frequently the seat of defective development, causing various malformations, some of which are consistent, and some inconsistent with life, some remediable by surgical means, and some not. A failure to complete the anterior wall of the trunk is not an uncommon defect, as is seen in cases of thoraco-gastro-schesis, thoraco-schesis, and gastro-schesis or fissura abdominalis. The latter is seen in different varieties: 1, extending the entire length of linea alba; 2, congenital hernia funis, at umbilicus; 3, closed at umbilicus, defect above; 4, closed at umbilicus, defect below. As a rule, Class 4 is associated with exstrophy of the bladder. The most common deformity of the bladder is

1. Exstrophy of bladder. Other malformations are:

2. Absence of bladder. When this exists it is almost universally associated with absence or imperfections of other important organs or structures, rendering life an impossibility. The condition is extremely rare, the organ usually being represented by a small overlooked pouch or rudiment. One interesting case is recorded by Fleury, in which the ureters opened directly into the urethra, and the girl lived to the age of 16 or 17 years. A post-mortem was held and no trace of a bladder could be found. Benninger reports a similar case. Bonn records a case in a new-born child in which kidneys, ureters and bladder were absent. Gross reports a case of marked arrested development in which the ureters ended in the gut near its termination, with imperforate anus, and the large bowel absent. A similar case was noted by Meyer. Under this heading might be included the peculiar case of Richardson; and, according to Chance, a case resembling Richardson's has been observed by Camper. Wytterhoeven reports a case of atrophy which was mistaken for absence. There existed a uretero-vaginal fistula for thirty years, causing the shrinking of the bladder to the size of a pea.

3. The opposite condition, that of multiple or supernumerary bladder. This is likewise one of exceedingly rare occurrence. Before we diagnose a multiple bladder, each bladder must be found to have its separate ureter, and all coats demonstrated. Many of the so-called multiple bladders are in reality merely sacculations or herniæ of the bladder. The following have been reported: Blasius found a double bladder; A. P. Smith, double bladder; Scibelli, triple bladder; Molenette, five

bladders, six ureters and five kidneys. Sacculation of bladder and bilobed or multiple bladder are frequently acquired, and not congenital conditions, due to pathological changes in the bladder wall or interference with escape of urine, as in prostatic enlargement or stricture of urethra, or due to enlargement of a certain portion of the mucous membrane. It is claimed by some authors that the bladder originates from a double allantois, which owing to arrested development might cause a bilobed bladder. A case is mentioned by Heyfelder in which the septum was almost complete. Holmes describes a cyst which might have been in all probability a hernia.

4. Imperforate bladder or atresia of urethra. This condition is very rare. Cases are on record which have been associated with exstrophy, and hence are doubtful.

5. The posterior wall of bladder may be the site of the malformation, and the bladder communicating with the pelvic cavity, vagina or rectum. This form is unusual.

6. Both the anterior and the posterior wall may be defective. This condition is still more exceptional.

The urachus is often the seat of arrested development: 1, failure to obliterate at any point, giving rise to a urinary fistula opening at the umbilicus; 2, it may close at both ends, forming a cyst, which may be subdivided into smaller cysts; 3, it may close at peripheral extremity, but the remainder be unobliterated and communicating with the bladder; 4, it may close at visceral end and the remainder being open will cause a sinus at the umbilicus.

The abnormalities of the ureters consist of the following:

1. Double ureters are the most common, both of which may terminate normally in the bladder; both may terminate abnormally, or one may end normally and the other abnormally. Again, the double ureters vary in shape. Two distinct pelves, with the ducts uniting at any point on their way to the bladder, may enter that viscus through a single orifice. They may remain entirely separate throughout their course; or a single pelvis may divide into two. Complete duplicature has been reported by Chance, Schneider, Erlach, Ramsey and others.

2. Absence of ureter is extremely rare. Cases have been reported by Förster and Bartels.

3. Abnormal termination of ureter may exist by opening into a male genito-urinary organ, namely, bladder; prostatic portion of urethra; seminal vesicle, ejaculatory duct, vas deferens. In the female, the termination may be into the bladder; vagina; vestibule, urethra, under hood of clitoris, and Gärtner's duct. Open termination into the rectum is extremely rare. Such cases have been reported by Richardson, Camper, Simon, Gross and Meyer. Blind termination of ureter may exist as cystic dilatation; or no dilatation, associated with absent or atrophied kidney.

4. Congenital flexure of ureter may occur with no signs of inflammation, and after releasing the flexure, the fluid escapes easily.—Weigert. These conditions are in frequent association with other deformities.

An explanation of the anomalies of the ureter is given very clearly by Fenger. "If the ureter does not separate from the Wolffian duct, but remains a branch of the latter, the ureter will terminate in the seminal passages in man, and in woman in Gärtner's duct. If the ureter separates from the Wolffian duct, but does not move up into its normal place in Lieutaud's triangle, we will have an abnormal termination, low down in the prostatic portion of the urethra. If ureter separates from the Wolffian duct without emptying into a hollow organ, a blind termination results. If the ureter, instead of moving forward into the anterior portion of the cloaca, remains at its original location in the posterior portion, we find the termination of the ureter in the rectum. Double ureters originate either as a double branch from the Wolffian duct or as a single branch, which later divides."

The condition of exstrophy of the bladder includes, as a rule, all the cases of gastro-schesis in which the fissure is in the lower part of the abdomen. It is seen in different varieties or degrees of the same variety: 1. There may occur no fissure in either abdominal or bladder wall, but an absence of symphysis, with hernia of the bladder.—Mayo. 2. The bladder wall is perfect and protrudes through abdominal fissure or the umbilicus.—Vrolik. To this condition the term "ectopia vesicæ" has been applied. 3. The ordinary form is fissure in both abdominal and vesical walls. This form has been subdivided by Winkel as follows: Fissura vesicæ inferior, or closed symphysis with defect below; fissura vesicæ superior, or closed symphysis with defect above; absence of abdominal wall, of anterior bladder-wall, of symphysis pubis with cleft of external genitals. This last division he calls "eversio et ectopia vesicæ." 4. Anterior and posterior walls of the bladder may both contain a fissure, and thus occur in two halves, separated by an opening of the intestinal tract.—Bartels, Retzius, Friedlander, Rose, Frænkel, Meckel, Vrolek, Fœrster, Dietrich.

To the ordinary form of this defect many names have been given: ectopia vesicæ, ectropium v., ecstropia v., extroversio v., inversio v., eversio v., fissura v., eversio et ectopia v., exstrophy of the bladder, and congenital hiatus of bladder.

The term "exstrophie" was first applied by Chaussier, in the year 1780, and has been almost universally adopted at the present time. The words "ectopia vesicæ" have been generally accepted as indicative of that rare condition described by Vrolik in which the anterior wall of bladder is not defective.

In the common form of exstrophy the clinical picture is so very characteristic that if the treatment was as easy to carry into effect as the diagnosis is easy to arrive at, the history of this affection would not be such a sorry one as regards results in attempts at correction. Extensive fissura abdominalis occurs in females almost entirely. Exstrophy of the bladder occurs with much more frequency in the male. Of 68 cases collected by Mr. Earle in 1828, 60 cases were in males and 8 in females. Holmes in his experience found none in females. Sir H. Thompson reported 8 cases, 2 in females. McWhinney mentions 7 males and 2 females. Phillips collected 21 cases in females. Braxton Hicks reported 14 in males, 2 in females and 4 doubtful. Geoffrey St. Hilaire found one-fourth of the cases in females. Duncan says this condition is found "more often in males because the generative organs are more complex. It has been pointed out that deficiencies in anterior median line occur most frequently in the male. Deficiencies in posterior median line occur with more frequency in the female sex." These cases were frequently mistaken for hermaphrodites; or else male children were considered to be females. In 1808, Soden reported a case of exstrophy which is of interest, as it shows with what difficulty the sex of the individual has been decided on in some instances. The patient, 24 years of age, wore a skirt and was baptized Sarah L——. After examination by three medical men, Sarah was pronounced a male. In 1860, Buck and Coote wrote in the *Lancet,* under the title, "A Short Account of the Post-Mortem Examination of the Body of a Person Who for 73 Years Passed for a Female; Congenital Malformation of Penis, Scrotum, Testes and Pelvic Bones with Complete Absence of the Urinary Bladder." One explanation of the discrepancy in the proportion of occurrence in sexes, is that, cases in the female were not recorded. Owing to the natural modesty of the sex, there was less of an inclination to let the matter become known. As misleading features, might be mentioned the dress, usually that of a female; small testes lost in large labial folds of skin; the width of hips, causing the waddling gait, which is an exaggeration of the female gait; and the feminine mode of micturition, in those cases in which the urine is retained for a short space of time in the dilated ureters.

This deformity is not incompatible with a comparatively long lease of life, and even in some cases with the power of reproduction. In the male the sexual potentiality is usually absent, if not sterile, the abnormality rendering him impotent. In the female conception and delivery is sometimes possible, as in cases recorded by Huxham and Bonnett, Thiebault, Ayers, and Hamilton. Many of these cases die in infancy, but judging from the literature, the majority reach adult life, and cases are on record in which the age of 40, reported by Bartholin; 46 and 49, by Quatrefages; 71, by Flajain; 73, by Coote, and 80 years, by Hamilton, have been reached.

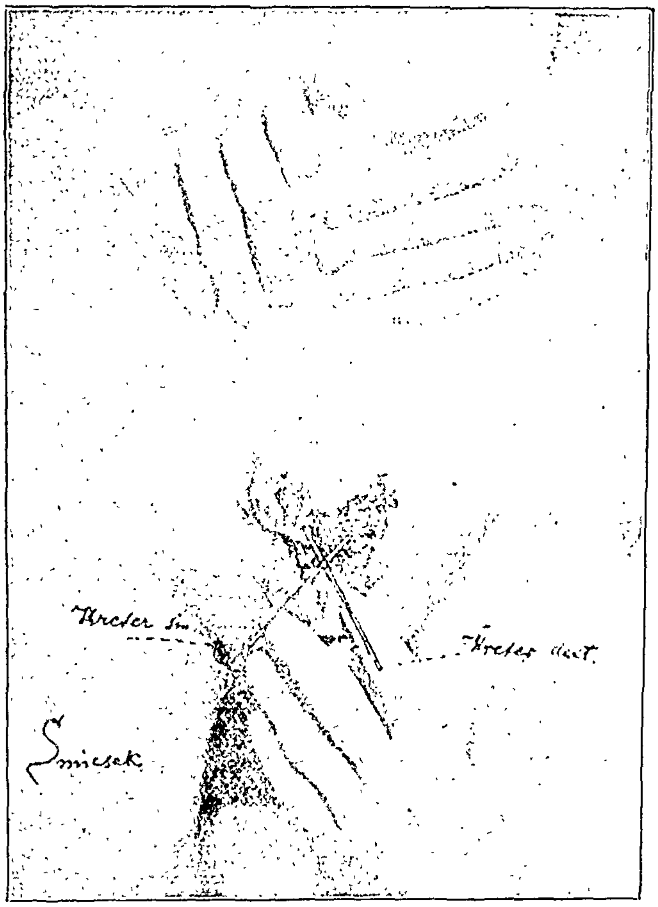
The patient is usually seen during infancy or childhood, with a tumor presenting in the median line of the hypogastrium, at the site of the mons veneris.—See Fig. 1. This tumor is a red vascular, round or ovoid projection, which has at different times been mistaken for hernia, nevus and malignant tumor. Frequently this mucous eminence is divided into two, by a longitudinal narrow ridge, extending from top to bottom. This bilobed appearance was noticed by Champney, Chaussier, Breschet and St. Hilaire. It has been pointed out as a factor in favor of the theory that the bladder arises in two halves, which ultimately unite. This condition is one step in advance of those cases reported by Bartels, Rose and others, in which the bladder has not united and was in two halves, the halves being separated by an abnormal opening of the intestine.

This elevated mass is, in reality, the mucous surface of the posterior bladder wall, which protrudes where the anterior bladder and abdominal walls are absent. This defect in the anterior wall of the bladder was formerly described as a cleft. Tenon, in 1761, observed and placed stress on the point that all of the anterior wall was wanting; that, as a matter of fact, but little more that the trigone remained. The degree of elevation depends on the intra-abdominal pressure. The recti muscles being separated, there is present a weakness in the abdominal wall at this location, a ventral hernia, as it were. Similar to other hernias, this swelling decreases or increases in size and volume, in accordance with the position and the movements of the patient. When standing it is more marked that when lying down and when straining, such as in coughing, sneezing, crying, defecating, etc., it becomes much more prominent.

The size of this swelling varies. In infants it is usually no larger than a walnut, but with advancing years it increases, and in adults may attain the size of a fist, from 2 to 3 inches long by 4 to 5 inches wide (5 to 8 by 10 to 12 cm.). The color is usually of a bright-red and is almost constantly varying slightly, owing to the external agencies which are always irritating this tender surface. At the edge of this mass, the margin where the mucous membrane passes into epidermis, is seen a boundary line or zone of smooth bluish tissue, such as is seen at the edges of the fissure in cleft-palate and hare-lip. In some cases this edge presents a margin of dense contracted connective tissue, evidence which has been claimed by some as a prenatal attempt at repair and cicatrization on the part of nature. The surface, as said above, is composed of mucous membrane, the "stratified, squamous or transitional" type of epithelium. The mucous membrane, as a rule, retains its characteristics and does not change as much as would naturally be expected, but persists as mucous membrane for many years, notwithstanding its location on an exposed part of the body, where mucous membrane is not found under normal conditions.

As bearing on this point, there might be mentioned the case operated on by T. Smith, in which he transplanted the left ureter into the colon. Afterward he noticed that the left side of the exposed mucous membrane of the bladder underwent a change in appearance, "having become much lighter in color and somewhat cutaneous in character." That this exposed mucous membrane is kept continually moist may be the reason for its persisting as such. It is strange that in his case the urine from the right ureter should not have exerted an influence on the left side; for in the ordinary cases of exstrophy, a large portion of the mucous membrane is above the ureteral orifices; yet it maintains the characteristic features of mucous membrane. In the young it is tender and may bleed profusely on slight provocation. but soon becoming somewhat accustomed to the circumstances in which it finds itself, its vascularity diminishes and the surface becomes quite tolerant of the unavoidable irritation, and the wall becomes quite hypertrophic. From the surface, usually at its lower portion, is observed the escape of the urine, which may dribble away almost constantly, or be expelled in small jets at irregular intervals. If in jets, it is almost certain that the ureters are more or less dilated. The ureters in many cases are dilated, as is also the pelvis of the kidney. Cooper mentions an instance where the ureter was larger than the rectum. Mörgelin reports a similar condition. Petit cites an instance where the dilatation was to an extent of 2 inches in diameter. Thilow relates finding the ureter very large, and Oliver reports a case of the ureter being as large as a child's intestine. Meckel says the ureters are often found dilated in other varieties of congenital deformities, as, for instance, in a case of an acephalous monster, in which the genito-urinary apparatus was otherwise normal. He claims that this dilatation of ureter might be due to some cause other than obstruction.

PLATE I.



Exstrophy of Bladder. (After Herczel.)

The course of the ureter in exstrophy is somewhat altered from that taken under normal circumstances. The cul-de-sac between the rectum, or uterus, and bladder is greatly enlarged inferiorly and anteriorly, owing to what is practically an absence of the bladder from the pelvic cavity. They enter the bladder from below, after descending into this deep cul-de-sac, and then ascending to the bladder. Normally, they descend comparatively straight from kidneys to bladder.

On close examination, it will be seen that the urine makes its exit from two small pyramidal prominences: at the apex of each will be found a larger or smaller opening which is the orifice of the ureter. It will be noticed frequently that there is no umbilicus; if present, it is only a flat pigmented spot. This absence gives to the abdominal wall above the exstrophy a most peculiar appearance.

Wood calls attention to the crescentic border of cicatricial tissue to be felt and seen immediately above the tumor mass, which he considers to be the upper or omphalo-mesenteric portion of umbilicus. A case is on record by Champneys where the umbilical cord was divided in two just before reaching the child's body; and another case by Dietrich, where two umbilical cords ran separately to the placenta. According to Duncan, a similar instance is spoken of by Littré. The pubic bones are separated at the symphysis to the extent of a few inches, or the bodies of the pubes are absent, the rami being connected usually by a band or bands of firm connective tissue.—See Fig. 2. A fact relative to this point is that in birds which have a cloaca the symphysis is absent.

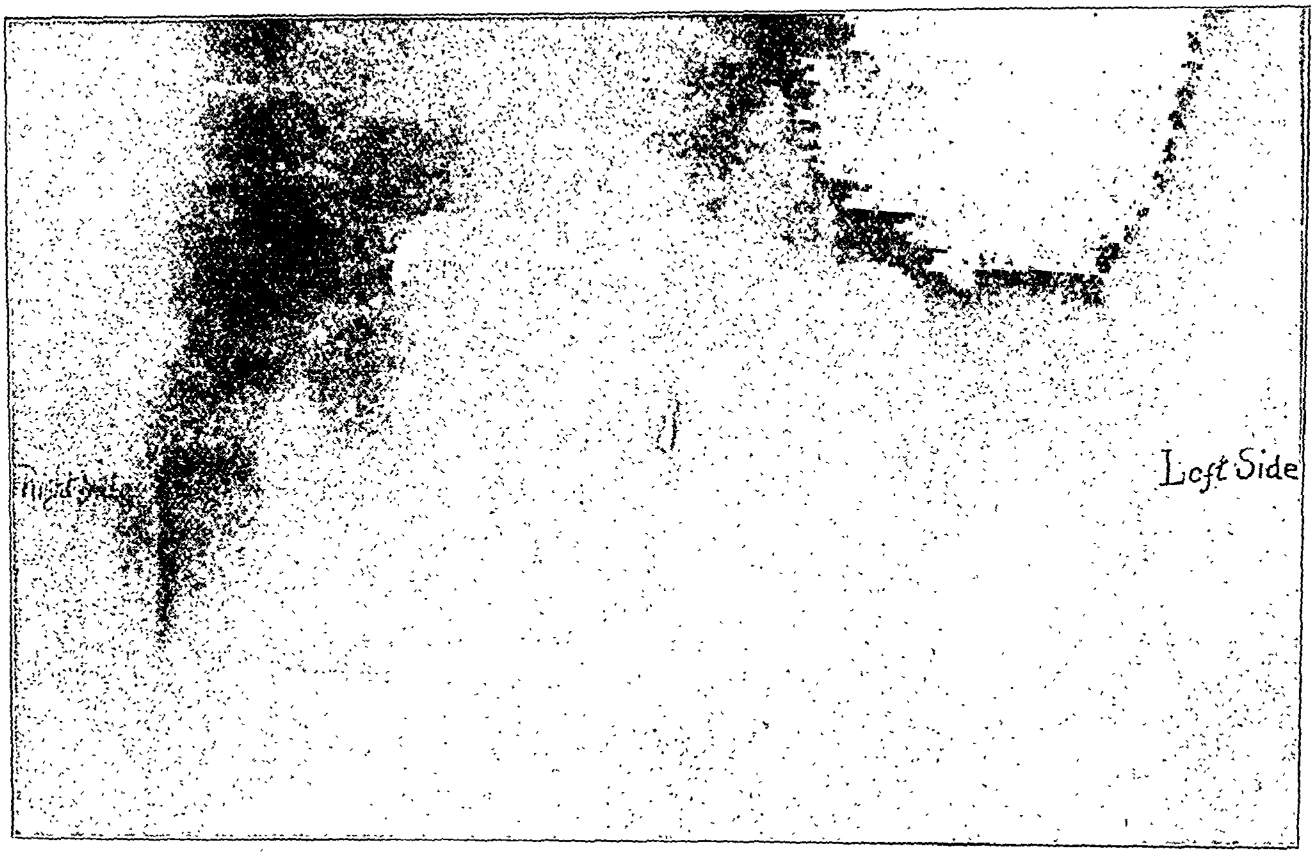
Divarication of the pubic bones, or cleft symphysis, is commonly said to be an invariable sign in exstrophy of the bladder; but cases are on record where the symphysis was perfect, as noted by Coates, Draman, Roose, Walther and Quatrefages. Exstrophy may exist without cleft symphysis; so cleft symphysis may exist without exstrophy, as stated by McWhinney, Meckel, Vrolik and Mayo. Exstrophy with cleft symphysis is the ordinary form. Exstrophy with perfect symphysis is an uncommon occurrence, as in the case of Coates and others. No exstrophy with cleft symphysis is also uncommon, as in the case of McWhinney and others, while no exstrophy with perfect symphysis is the normal condition.

This separation of the pubic bones causes a separation of the recti abdominales muscles. This is noted especially above the exstrophied mass, extending up to the ensiform, where a flat, hard and resisting surface can be felt 5 to 8 cm. (2 to 3 inches) wide at the bottom, becoming narrower as it ascends. This is the connective tissue of the enlarged and thickened linea alba; the skin over this seems perfectly normal.

The thighs are separated farther than they are normally, owing to the cleft symphysis. When coupled with a bending forward of the body trunk, in an effort to protect the sensitive mass in the pubic region, it makes the gait a very characteristic one, and if once observed will be easily recognized on another occasion. The distress of the patient is both physical and mental, physically from the constant flow of urine and from the irritation caused by rubbing of the clothing. The irritation is not confined to the tender exposed mucous lining of the bladder, but often causes intertrigo, dermatitis, and eczema of the surrounding skin, most usually of the thighs. The papillary orifices of the ureters are irritated by friction of clothes or other cause. These orifices present a warty appearance and may be seen to discharge pus or muco-pus. This appearance is aptly likened by Wood to the granular conjunctiva induced by entropion of the eyelids. This irritation and inflammation of the ureteral orifices produce the ordinary effects of obstruction, as is seen by dilatation and hypertrophy of ureter, pelvis and kidney. It is similar to the condition in ordinary pyelonephritis or surgical kidney, and in ascending infection of kidney in cases of cystitis. Mentally, he must suffer, for owing to his pitiable condition, he is excluded from society and from all the ordinary pleasures which are supposed to make life worth the living. The individual thus afflicted is usually normal in other respects and enjoys good health. This fact makes his isolation all the more pitiable. On account of the constant escape of urine, the clothing is saturated and the odor is almost unbearable to all but the patient, whose sense of smell seems to have become "acclimated," as it were. The penis is rudimentary, short and broad, and is attached to the bladder near the openings of the ureters, with an epispadius more or less complete. John Wood states that epispadius is always an accompaniment, and cites one case where only the anterior part was epispadiac, the posterior portion of the urethra being closed. Küster reports a case of exstrophy in which the penile portion of urethra was closed, and on the dorsum of the penis a white cicatrix was visible. As a rule, it can be said that epispadius does exist without exstrophy; exstrophy does not exist without epispadius. The verumontanum and the openings of the ejaculatory ducts are to be seen in the bottom of this epispadiac groove, the imperfectly formed urethra. The testicles may be descended or undescended; either in the abdominal cavity, inguinal canal or scrotum. The latter may be divided or imperfect.

Herniæ are not infrequently found in conjunction with exstrophy, either a single or double inguinal or ventral. The perineum is usually defective. The anus, being located immediately behind the scrotum, is often

PLATE II.



Skiagraph, showing Separation of the Pubic Bones in Case of Exstrophy of the Bladder. (Dr. Weiner's Case.)

imperforate, but more often perforate, with prolapsus. There is also present a general looseness of the mesentery of the large bowel and duodenum. The pouch of peritoneum, cul-de-sac of Douglas, descends deeply between the front of rectum and the posterior surface of bladder.

In the female, associated with the exstrophic tumor, the clitoris and labia may be found in a malformed or immature condition. There may be present prolapsus uteri, owing to the pelvic floor being weakened by the divarication of the symphysis. An exstrophied bladder may become carcinomatous, as in a case mentioned by Kelly. In a young male cat with exstrophy, dissected by Geoff. St. Hilaire, the conditions were found to be the same as in man.

ETIOLOGY.

The cause of the deformity termed "exstrophy of the bladder" has thus far been a matter of conjecture; and at the present time, nearly two hundred years after the detailed description of this condition by Mowatt, no theory meets with universal approval. In 1877, Francis Champneys, in reporting a case, delves into the then existing literature on the subject very extensively, and devotes considerable attention to the different ideas advanced in attempting to explain the existence of such a defect. Among the causative factors may be mentioned, not on account of any scientific value, but merely as interesting facts or coincidents, the few cases of so-called "maternal impression." One woman, who was employed in eviscerating geese during her pregnancy, gave birth to a child with exstrophy of the bladder. Another woman, one of the mob during the "reign of terror" in Paris, gave birth to a child with a similar defect. In another instance, a wife fell from a tree, alighting on her coccyx, and in describing her sensation, said that she "felt as if her insides were being forced out in front." Shortly after the accident she was confined, the offspring being perfect in every detail except the presence of an exstrophied bladder. And, also, the case reported by Mowatt where the mother had been struck by a cow's horn and "the fright remained with her and did terrify her sometimes in her sleep." An allied interesting case is recorded which may be termed one of "paternal impression." Shortly before the birth of a child the father dreamed that his son came to him and showed him the bleeding stump from which his external genitals had been removed. The child on delivery was found to have an exstrophy of the bladder.

But, passing from the fanciful to more substantial reasoning, many theories are to be found. They may all be classified under the three general headings of mechanical, pathological, and arrested development.

1. Mechanical: Breschet considered as the etiological factor the bursting of the bladder due to distention or fetal movement. Duncan placed the order of sequence as follows: imperforate urethra, distention from retention, divarication of pubic bones, and rupture of bladder. Foerster places the cause with the accumulation of fluid in allantois, preventing the closure of the abdominal wall over it. Creve thinks it is due to separation of the pubic bones. Roofe supposes the cause to be due to external injury, separating at the same time the bones of the pubes and bursting the bladder. Rose found the right kidney in the pelvis. Ahlfred regards as a cause the rupture of the exposed and distended allantois, the excretory duct of which has not been formed. Rolgans states that it develops at the end of the fourth month of fetal life, and that pressure of the umbilical cord against the anterior abdominal wall, as the fetus is head downward and the cord between the legs, would be a causative factor. Morgelin considered obstruction of the urethra sufficient cause, the obstruction and distention beginning before the visceral plates have fused to form the abdominal wall. He believes also that adhesions of the bladder to the yet ununited abdominal wall have more to do with failure to close than rupture of the bladder from obstruction of urethra. Chance deemed as a cause over-distention of the allantois, followed by rupture.

2. Pathological: Velpeau and Benjamin Phillips lay stress on the extreme thinness of the abdominal wall in the early stage of its development, and believe that then laceration or ulceration takes place, causing the defect. They also look on the absence of the symphysis pubis, not as a divarication, or simple absence, but as a necrosis of bone. They call attention to the cicatricial boundary. Chaussier notes failure of the abdominal wall to develop perfectly, then destruction of the anterior wall of the bladder. Wood usually found adhesions of the anterior abdominal wall to fetal membranes "due to inflammatory or degenerative processes arising from specific diseases, such as syphilis, etc." Perls asserts the cause to be the presence of adhesions between the lateral plates and the amnion.

3. Arrested Development: Vrolik says: "It can only be explained by an imperfect development of the urinary bladder from the allantois. It is not improbable that the urinary bladder is formed by two half parts, which approach each other anteriorly and posteriorly on the mesial line. If this juncture does not occur, the different forms of vesica inversa will occur." Meckel says that the bladder is originally a flat surface, the edges subsequently uniting. Failure of this union of edges is given as a cause. Fyres gives as a cause deficient development of the urachus—allantois. Bartels, in his case, found an abnormal opening of intestine separating the two halves of a double exstrophied bladder. He believes the allantois to be developed in two halves, and in this case, the cause was said to be due to an abnormal development of the intestine occurring before the two halves of allantois had united. Geoffrey St. Hilaire and Vrolik, because of the following coexisting malformations, considered the defect to be due to arrested development: fissures of head and face, umbilical hernia, abnormalities of intestine, imperforate

anus, spina bifida, bilobed appearance of the bladder in some instances, other defects in genito-urinary organs, occasional absence of the umbilical artery, fissured dorsal vertebræ, confluent toes, talipes, and genu valgum or varum. Reichel ascribed as a cause arrested development occurring in first weeks of fetal life, as a result of disturbances in formation of primitive streak, that is, coalescence of the borders of the primitive groove does not take place, or is defective.

This large number of various explanations is in itself sufficient to show that the causative factor or factors have not yet been pointed out. Many of these theories are at once seen to be based on a limited or imperfect observation of the cases or the literature. To the explanations classed under the heading of mechanical, the following objections have been raised: The bladder would be stronger than the abdominal wall. If the bladder ruptures, why should it always do so in the anterior wall and in a superior and inferior direction, while in adult life, when it occurs, as a rarity due to direct force or over-distention, in the majority of cases it extends from the insertion of the urachus down in the posterior wall, and the abdominal wall is never ruptured? The rupture need not be large, as a small opening relieves the pressure at once. Imperforation of the urethra does not occur; the urethra is too patent. Divarication of the pubic bones is not always present. No information is given as to how this injury to fetus causes this deformity. Pressure sufficient to cause atrophy of tissue in the abdominal wall would also be sufficient to stop or interfere with the circulation in the cord. If this pressure is the cause, why is the exstrophy so often associated with other deformities? Why is the defect so large as compared with the diameter of the cord and the area that it would press on? No case was found on record where the cord had exerted this pressure, and even partially produced this condition.

The objections to a pathological factor in etiology may be given as follows: This cicatricial appearance is seen in other deformities, such as hare-lip, and does not of necessity mean previous pathological change unless it should also apply to other deformities. If it is due to ulceration, why does not, occasionally at least, the intestine intervene between the bladder and abdominal wall and so fill in the gap or take part in the line of union? As a rule nothing except the deformity points to inflammatory change. That the os pubis is destroyed is very doubtful, and is not confirmed by any other investigator. Adhesions are not usual, and according to the majority of writers, syphilitic children are not prone to this deformity.

Under the caption of arrested development Meckel's embryology is not consistent with the facts. As to the others, under this heading, very little can be said, because no reason is presented for the sudden arrest of Nature's handiwork. It is found that the only theories which can be considered seriously are those which come under the heading of arrested development. Those falling under either the mechanical or pathological, or even combinations of these, have been shown to have some serious objection. Unfortunately, after having arrived at the conclusion that arrested development is the cause of exstrophy of the bladder, no more is known than before. And, for this conclusion to be of any practical value, the reason for Nature's stopping before her work was completed must also be known.

The causative factor in the formation of exstrophy of the bladder may or may not be of any practical importance after it is discovered and made evident to the profession. Even if the etiology is known, it may not be possible to follow that rule which has become axiomatic and universally in force in the practice of medicine and surgery, namely, "ascertain the cause and then remove it." But, knowing the manner in which the malformation is formed, the surgeon in all probability will be better able to operate in an effort to repair the defect, as is done in hernia; in the latter the philosophy of the process is known, yet it is impossible to prevent its occurrence.

ANATOMY AND HISTOLOGY.

The bladder varies in shape, size and position according to the degree of distension. When contracted it is of triangular form, its cavity assuming a Y or T shape, and is almost hidden in the pelvic cavity. When moderately full it becomes rounded, and if completely distended it is of an ovoid shape, with the larger end below and posterior, and the smaller end above and anteriorly. A line through its long axis would start from a point between the umbilicus and symphysis (depending on the degree of distension), going in a direction downward and backward, and would strike the tip of the coccyx. The average capacity of the bladder is one pint, though, of course, under pathological conditions too numerous to mention, this capacity may vary from eight or ten pints to that of a few ounces. The normal capacity, according to Hunner and Lyon in a recent and excellent work on mensuration and capacity of bladder, is 430 c.c.

The relations of the normally-formed bladder are of importance from a surgical standpoint. Anteriorly, the bladder is in relation with the triangular ligament of the urethra, subpubic ligament, symphysis and body of pubis and, if distended, with the lower part of the anterior wall of abdomen. The wall of the bladder is separated from these structures by loose areolar tissue and connected to the pubic bones by means of bands of fascia, designated in this location as the anterior true ligaments—pubo-prostatic, or pubo-cystic ligaments. Posteriorly it is in relation, in the male, with the rectum; in the female, with uterus and vagina; in both, loops of small intestine may intervene. Superiorly it is in relation with the abdominal or peritoneal cavity, the urachus, and loops of small intestine. Inferiorly it lies over the urethra and prostate. Laterally, the sides, when distended, are rounded and prominent. When empty, they are merely curved edges. At the upper part it is in relation with the peritoneal cavity and loops of small intestine; in males with the vas deferens; in females, the viscus is connected with the fascia by means of loose areolar tissue, which is continuous with the broad ligaments. Each side is crossed obliquely by the obliterated hypogastric artery, which joins the superior vesical artery and also serves for attachment.

The bladder, though a movable, or rather a distensible, organ, is held quite firmly in position by means of true and false ligaments. The true ligaments, so called because formed of folds of rectovesical fascia, are five in number: two anterior ligaments, extending from pubes; two lateral ligaments, extending from lateral wall of pelvis, and one, the urachus, serving also as a ligament. The false ligaments, formed by folds of peritoneum, are also five in number: two posterior, from sides of rectum or uterus, form the lateral boundary of reco-vesical fold of the peritoneum, and contain the ureters and obliterated hypogastric arteries. The two lateral are reflected folds of peritoneum from the iliac fossa; and one superior, a fold of peritoneum extending from the fundus to the umbilicus, covering the urachus and obliterated hypogastric artery.

The base of the bladder is a very important part of the organ. In the male it is triangle-shaped, bounded at the sides by lateral surfaces; in the front by the base of the prostate, and behind by the cul-de-sac formed by the rectovesical fold of the peritoneum. Behind the prostate are the vesiculæ seminales and vasa deferentia. The base of bladder is directed backward as well as downward and rests on the second portion of the rectum, to which it is adherent by dense fibro-areolar tissue. The bladder may be punctured through the rectum at this point without injuring the peritoneum. But in exstrophy the peritoneum dips down much deeper, as was found in Lloyd's case. In the female, it is separated from the rectum by the vagina and cervix. This part of the organ adheres to the vagina, its relationship depending on its degree of distension. The "neck of the bladder" is a phrase used to designate the junction of bladder and urethra, and by some anatomists to include the prostatic portion of the urethra. It is the lowest portion of the bladder when the individual is standing erect.

Blood-supply.—The arteries are the superior vesical and the obliterated hypogastric; the inferior vesical, which usually arises from the superior vesical; the middle vesical; the obturator, which gives off a visceral branch; and the sciatic, which occasionally does the same. All of these arteries arise from the anterior trunk of the internal iliac. The veins do not accompany the arteries constantly. They form an irregular and inconsistent network of vessels, which surround the lower part of the viscus more abundantly than its fundus—the vesicoprostatic plexus. These veins all terminate in the internal iliac vein.

Lymphatics.—These vessels arise from the entire surface of the organ, chiefly on the posterior surface and neck, and run beneath the peritoneal coat through small glands to join others from the prostate; they finally enter the internal iliac glands.

Nerve-supply.—The bladder is in communication with the central and sympathetic nervous system by means of the sacral plexus of the former and the hypogastric plexus of the latter. The nerves arising in the hypogastric plexus have been traced almost exclusively to the fundus of the bladder; those originating in the sacral plexus, and especially the branches of the fourth sacral nerve, are distributed to the neck and base. Some of these nerves are distributed to the muscular coat and others to the mucous membrane. Microscopic ganglia are found along the course of the nerves in the bladder.

The wall of the bladder is composed of the following layers from without inward: 1, serous; 2, longitudinal muscular; 3, circular muscular; 4, submucosa, and 5, mucosa.

1. The serosa or peritoneal is not complete. The anterior surface is almost entirely devoid of peritoneum when the bladder is empty. The peritoneum is reflected from the bladder to the anterior surface of the abdominal wall, where it changes from visceral to parietal peritoneum. When the bladder is distended the urachus is not sufficient to prevent the falling down of the peritoneum as a cul-de-sac, and covering a large part of the superior portion of its anterior wall. This space, anterior to the wall and below the peritoneum, was first described by Retzius, and hence is called cavum Retzii, and is of great importance in cystotomy by means of the suprapubic incision. Laterally, the serous coat does not invest the entire surface, being absent below the obliterated hypogastric arteries. The posterior surface is entirely covered by the peritoneum. The base is only partly covered by this outer coat; it is absent where the bladder and rectum (or vagina) are in intimate relationship. The structure of this membrane is necessarily the same as the serous membranes in other parts of the body. It is composed of a layer of endothelial cells resting on a layer of connective tissue.

2. The longitudinal coat is composed of unstriped muscular fasciculi. It is separated into more or less perfect subdivisions of outer, middle and inner layers. The outer longitudinal layer originates from the body of the pubes—musculo-pubo-vesiculis—and extends up the anterior surface, over the summit and down posterior surface, becoming attached to the prostate, or in front of the vagina in the female. The fibers are somewhat oblique on the sides, and of course overlap each other. This layer has been named the "detrusor urinæ." Mercier ascribed to this muscle a double function: *a*, to force the urine toward the neck of the bladder, and *b*, to open the orifice and keep it so during the act of micturition.

3. The circular muscular or the middle layer is not particularly noticeable over the body of the bladder, but at the neck the fibers unite, forming the circular band of muscle called the sphincter vesicæ. The mus-

cular fibers of the neck have been described as descending into the urethra, or into the verumontanum or capus gallinaginis of the urethra. It is supposed that this structure acts as a valve to the urethra, falling down into the tube and obstructing it when the sphincter is closed and rising up so as to stand erect in the middle line, thus allowing the urine to flow by during the act of micturition. The internal longitudinal layer is thin and inconspicuous, except where two oblique bands of fibers originate behind the orifices of the ureters and converging become united and are inserted into the prostate gland or vagina. These were called "muscles of the ureters" by Sir C. Bell, and are supposed to maintain the obliquity of the ureteral insertion while the bladder is contracted, thus preventing regurgitation.

4. The submucosa is not very marked and consists of an interlacing of very loosely connected areolar tissue connecting the muscularis and mucosa in such a manner that the latter may be able to move considerably over the former. Within this layer are found the vessels and nerves which supply the mucosa.

5. The mucous membrane of the bladder is continuous with that lining the ureter and urethra. It is composed of epithelium in layers of cells, each stratum being composed of cells differing in size and shape from those of the other layers. In the deeper layer, that which rests on the submucosa, the cells are roughly columnar in shape; in the middle layers, more round or ovoid, and in the superficial layers the individual cells are distinctly squamous in configuration, the so-called "transitional or stratified squamous epithelium." The mucosa is connected to the muscularis loosely by the submucosa, and hence is capable of a limited independent motion. If the viscus is empty the mucosa is usually thrown into folds, which are not permanent, as they disappear on distending the bladder. At one situation, the triangular area at the base, these folds or rugæ do not appear, owing to a more firm attachment to the muscularis. The mucous membrane shows no villi. Small racemose glands are to be found, especially at or near the orifice of the urethral opening. Small lymph-follicles are also present in the mucosa of the bladder.

The inner surface of the bladder presents at its base the trigone, trigonum vesicæ, or "triangle Lieutaudii." This is, as the name implies, a three-sided space, with its apex located behind the urethral orifice, and its base bounded on each side by the openings of the ureters. This space is almost an equilateral triangle measuring about 1½ inches (3 to 4 cm.) on each side. The mucous membrane over this area is bound quite firmly to the muscularis and presents no rugæ. Immediately behind the posterior border of the trigonum the base of the bladder is normally more or less sunken, and is termed by the French the "bas fond." In cases of hypertrophy of the prostate or muscular atrophy or weakness this is the region which becomes deeper and is the seat of retention with its chain of symptoms and often of calculiformation. In many cases an increased thickening of the submucosa, causing an elevated ridge of mucous membrane extending from the trigonum forward to the urethral orifice, is present, which has been called the uvula vesicæ. This divides the bladder into two halves, which may have something to do with embryologic formation.

The openings of the ureters into the bladder are quite peculiar and of the greatest surgical importance. The ureters are inserted into the bladder obliquely, according to Cabot, extending obliquely for the distance of 1 to 1.5 cm. between the mucosa and the muscularis. The opening on the mucosa is one at each superior angle of the vesical trigone. The orifice is at times difficult to locate, owing to lack of any visible opening and little or no change in the surrounding mucosa. At other times the opening is at the tip of a prominence, the "mons ureteris" of Kelly, or it may be in a more or less distinct depression. Kelly found in young nulliparous women, at the ureteral opening, a small round dark point, which was never observed in multipara. This oblique insertion is supposed to act as a valve in preventing regurgitation. The peculiar muscular bands described as running from the ureteral orifices to the prostate were supposed to be for the purpose of maintaining this oblique insertion even with marked contraction of bladder. The first to point out this valve-like action of the ureteral insertion was J. L. Petit, a Frenchman, who early in 1700 called attention to the fact that when the viscus was dilated the anterior wall of the duct was brought forcibly into contact, and held so, with the posterior wall of tube, thus sealing effectually the opening and preventing any back-flow. The fact of dilatation of ureters and pelvis of the kidneys was rationally explained by stating that the inferior orifice was closed; hence, urine could not escape as it was secreted from the kidney, and as the gland continued to functionate necessary dilatation of duct and pelvis occurred. This was accepted as an established fact for many years. With increase in knowledge and more accurate methods of observation it soon became a well-recognized fact that inflammation of the ureter and kidney did take place as a result of cystitis. These facts led to experimentation on the lower animals. Lewin and Goldschmidt, in 1893, reported experiments made on dogs and rabbits. Colored fluid was injected into the normal bladder, and the colored particles afterward found in the ureters and pelves of the kidneys, in all probability carried there by an antiperistaltic movement. Courtade and Guyon repeated the above experiments with the same results, but noted the fact that the regurgitation occurred with less frequency in dogs, where the muscular development was more marked. Kelly, in recording his own observations on the reflux of air into the ureters, has noticed this phenomenon in at least twelve cases. The air enters without being perceived, but it soon becomes heated and then escapes in visible bubbles at the ureteral orifice.

He says in conclusion: "The fact that gas will enter the ureters simply shows that they are not air-tight under some conditions, and does not prove in any way that they are not water-tight under physiological conditions." These experiments, accompanied by observations, have caused it to be an acknowledged fact that regurgitation may and does occur, but not under normal conditions. When it does occur there is some pathological activity in the vicinity; or the fact that regurgitation does take place, if not followed by pathological change, will not be noticed. The experiments above cited demonstrate conclusively that regurgitation may and does occur in the normal bladder of the lower animals. Under normal conditions, if the valve becomes defective and nothing but plain non-infected urine regurgitates, no more damage is done than when the urine secreted by the kidney can not escape and there is resulting dilatation of the ureter.

But if septic matter, infectious material, is in the bladder, then the necessity under this abnormal pathological condition for a perfectly working valve is imperative. The experiments with clinical experience show conclusively that this valve is sometimes defective. The importance of the ureteral valve can not be overestimated, and certainly should be considered carefully before attempting implantation of this valve into a septic cavity like the rectum, sigmoid or colon. Another valve, like unto this, is sometimes defective, namely, the opening of the ductus communis choledochus, the mechanism of which is quite similar. It has been clinically established that this orifice is many times at fault, as in catarrhal cholangitis.

The ureter claims our attention when considering exstrophy of the bladder. It is a muscular tube 25 to 30 cm. (10 to 12 inches) in length, extending from the kidney to the bladder. On account of the higher position of the left kidney, the left ureter is longer than the right. The diameter is about that of an ordinary goose quill, 3mm.; but this is only an average diameter, and is not uniform, the tube presenting three quite constant points at which a diminution in the caliber will be found: 1, at a point 3.5 to 5 cm. (1½ to 2 inches) from pelvis of kidney; 2, the place where it crosses the iliac artery, and 3, at the junction of its pelvic and visceral portion. The duct runs a sigmoid course, its length exceeding the shortest distance between kidney and bladder. At the pelvis, on a level with the spinous process of first lumbar vertebra, the ureters are 9 cm. (3½ inches) apart; at the ileopectineal line, 6 cm. (2½ inches); at ischial spines, 10 cm. (4 inches); at entrance into bladder, 4 cm. (1½ inches). On account of this tortuosity the ureter may be picked up and lifted 3 to 4 inches into the abdominal incision without doing any serious damage. Also in implanting it into neighboring tissues or organs, its lower end will permit of considerable transportation owing to this S-shaped course. The function of the ureter is to carry the urine from the kidney to the bladder, and in doing this the muscular coat is called into action, as is seen in the peristaltic movement descending in waves at regular intervals. Thus, the function is not passive, but active. This peristaltic action was noticed by T. Smith, in 1879, while transplanting the ureter into the colon, and he spoke of it as follows: "It was observed that more urine flowed from the right ureter than from the left, and that the flow was not continuous, but at intervals; the ureters contracted and forced the urine out with a gush, etc." Kelly tells of starting this action by manipulating or pinching a ureter during an operation. The ureter is in its entire course extra- or retro-peritoneal, located in the retro-peritoneal space and surrounded by a layer of loose fatty tissue. It imparts a peculiar sensation when grasped by the fingers, and may be seen as a white cord behind the peritoneum, to which it is attached. This attachment was suspected, but it is due to Cabot's work that the fact was demonstrated under the microscope. Thus, in stripping the peritoneum, the ureter is always removed with it. When searching for the ureter in its upper portion, Cabot noted that the ureter was just external to the line of adhesion of peritoneum to the spine. In searching for the ureter in the pelvis, it can easily be located at the pelvic brim at the division of the common iliac artery. For convenience of description, the ureter has been arbitrarily divided into abdominal and pelvic portions, the dividing line being at the common iliac artery, about 3 cm. above the brim of the pelvis. The abdominal portion is about 12 to 15 cm. (5 to 6 inches) long. In passing down from the large into the small pelvis, the left ureter lies between the vertebræ and psoas muscle; the right ureter, on occount of the inferior vena cava, is situated a little more laterally.

The pelvic portion has, as a whole, a sigmoid course, and is from 10 to 12 cm. (4 to 5 inches) long. It is at first on the inner side of the internal iliac artery. In the upper pelvis it presents, acording to Glautenay, the following relations: It crosses the iliac vessels, lying behind the ileum on the right side and the sigmoid on the left side. It crosses over the pyramidalis and the obturator internus, separated by pelvic fascia; at this location it is behind the obturator and umbilical arteries, branches of the hypogastric. In the remainder of its course in women, it is crossed by the ovarian artery and vein, and the uterine artery. It passes through the base of the broad ligament, through a sort of ligamentous foramen, half way between the pelvic wall and cervix, along upper lateral vaginal wall; then curves to the anterior vaginal wall, terminating in the bladder midway between the cervix and meatus urinarius. In man it is crossed by the vas deferens and differential artery; then it passes on to the anterior surface of the seminal vesicle and enters the bladder, above the prostate.

The blood-supply consists of renal, spermatic, internal iliac and inferior vesical arteries. The blood-supply of the ureter is a question of vital importance when implanting it into neighboring structures or organs. Any such procedure will necessitate the freeing of the duct for some distance, and hence the danger of separating it too much and interfering with its nutrition. Margarucci found a branch of the renal artery accompanying the ureter almost to the bladder, in dogs. From these, branches penetrate the walls to supply the mucosa. The ureter receives its blood-supply, for but a short distance, from the vessels of the bladder—hypogastric. It has its own vascular system, a branch of the renal, and does not anastomose to any extent with surrounding vessels. This would account for the possibility of isolating it from its surroundings without causing necrosis. Monari calls attention to the branches of the spermatic artery which serve to supplement those of the renal artery. These two branches form the main arterial system of the ureter, that coming from below the bladder being so small as to be hardly worth mentioning. Monari also studied on dogs the extent to which the ureter could be isolated from its surrounding connective tissue without causing necrosis. He found that from 12 to 13 cm. (5 inches) did no harm, if it was carefully replaced in contact with the tissue from which it was removed and the peritoneum allowed to cover it again. On the other hand, if isolated and kept away from adjacent tissue, as by wrapping gauze around it, if only to an extent of 6 cm., necrosis and leakage would result. The nerves are derived from the inferior mesenteric, spermatic, and hypogastric plexuses. The veins are not constant in their course and end in various neighboring vessels. The lymphatics are well developed, and form several networks between the different layers of the ureter. The wall of the ureter is 1 mm. thick and consists of three layers: fibrous, muscular and mucous. The fibrous layer is continuous above with the capsule of the kidney, and below with the fibrous capsule of the bladder. The peritoneum is connected by fibrous bands from this coat to the anterior wall throughout its whole extent. The muscular layer has been variously described as being subdivided into an outer and inner longitudinal, and a middle circular; and, again, as consisting of only an outer circular, and an inner longitudinal. There is no sphincter-like arrangement at the vesical orifice. The mucous membrane is continuous with that of the pelvis of kidney above, and of the bladder below. It may present longitudinal folds which are not permanent, as they disappear on dilatation. The mucous membrane is the transitional epithelium. No glands or papillæ are found.

HISTORY.

The literature of exstrophy of bladder is of comparatively recent date. According to Mazel, nothing relative to the condition is to be found in the writings of Hippocrates or Galen. The records of the "middle ages" are similarly devoid of reference to this subject. The first case reported appears as late as 1595 and is presented by John Schenke. A similar case was also recorded about the same time by Tobias Cneulin. It is not until 1670 that the first record of a female case is found, which is reported by Van Horne. Thus it is found that the sixteenth and seventeenth centuries pass with their pages practically blank in relation to this condition. But during the eighteenth century, the attention of medical men is being attracted to it, and in 1713, a peculiar case is recorded by Richardson, as follows: "One John Warnsnope, of North Brierly, a poor boy, lived until he was 17 years of age and never made water, and yet he was very healthy, vigorous and active. He constantly had diarrhea on him, but without much uneasiness. The obstruction must have been in the kidneys, for he never had any inclination to make water. The serous part of the blood, which should have been thrown off by the urine, was discharged by the celiac and mesenteric arteries by the mediation of the glands into the guts. He died from fever." The above was written 187 years ago, and is interesting, because in all probability it was a case of ureterorectal, or vesicorectal anastomosis. The fact that the boy lived seventeen years is significant and of value at this time, when the Maydl method of treatment is being so widely discussed.

Huxham and Bonnett, under the title "Preternatural Structure of the Parts in a Woman, with an Account of Delivery," report the case of a woman who was 27 years old, in 1722. She was married, and had become pregnant. At the time of delivery, the physician was dumbfounded at finding neither vulva nor vagina. As a last resort, a free incision was made in the lower part of the abdomen, or where the vulva should be, and the successful delivery of a full-term child was accomplished. No mention of exstrophy of the bladder is made at this early date, but there can be no doubt that such was the condition existing.

Mowatt, in 1735, gives the following description of a case which came under his observation. This is the first valuable article to be found in the available English literature. "In November, 1732, a child was brought forth whose funis umbilicus was tied to the upper edge of a deep hole, and just above the ossa pubis this deep hole penetrated the peritoneum; but now a lump of spongy flesh rises out of it. The edges of the hole were at first and are now found sound. From the spongy flesh of this hole arise two papillæ about the size of the point of an ordinary probe, at which the urine constantly oozes; but when the child cries, the urine jets out as blood from the aperture of a small artery. The papilla on the left side is now closed, but the other keeps open as at first, through which the urine continually oozes and scalding all the parts, keeps them very raw. The penis arises immediately at the under side of the hole, was at first much less in size; it was and still is imperforated, and flat on the upper side next the glans, as if it had been slit longitudinally. It has two small veins and a large prepuce inverted. The scrotum and testes were and continue in a good condition; the scrotum is corrugated very close to the end of two prominences; the raphe appears in its middle with wrinkles on each side; the testes lie under the prominences; they can be moved from the place they are seated in, either higher or lower as we please to put them. The distance between the scrotum and anus is longer than it should be; and the ossa pubis are longer and flatter than in other children. There is a large prominence on each inguen under which the testes lie. The child is healthy, active and stirring, and is very much affected with his misfortune; for he frequently cries upon viewing himself, and is very unwilling any other should see these parts. The mother is a very healthy woman; has brought forth another child every way sound and right in all its members. She tells that in May, before she was brought to bed of this her first child, she was struck in the belly with a cow's horn; she recovered the hurt in two or three days, but the fright remained longer with her, and did terrify her sometimes in her sleep. I have twice or thrice thrust down a small silver probe at the right papilla about an inch or more, but can not feel it in the perineum. I have also closed up the papilla two hours and three-quarters with a small tent and an astringent plaster over it, but can discover no swelling in the perineum, but rather in the belly. Upon withdrawing the tent the urine squirted a great way, but by the uneasiness of the child and the anxiety of the mother, I'm obliged to desist at present from any further experiments."

Devilleneuve, in 1767, reports a case, giving a comparatively accurate description of the condition found. In 1749, Buxtorf, assuming the condition found to be a hernia, made an attempt at relief in his case by applying a "plaster bandage."

The first rational attempt at treatment appeared near the close of the century in the silver-bowl of Jurine, of Geneva. The principle of this apparatus, the first and original method of treatment, is still in use at the present day, though, of course, the archetype of Jurine can at this date be hardly recognized, owing to the many important improvements and modifications. An apparatus for use in exstrophy is still recommended. Toward the end of the century there appears an account of a man 20 years old, in 1791, a certain Mathew Ussen, who is designated as a German traveler, was in the habit of going from place to place, and it is judged that he presented himself to medical men for examination, by whom he was looked on as a very rare curiosity. This Ussen was fitted with one of these silver bowls by Bonn, of Amsterdam. Upon seeing this same case, Roofe suggested connecting the "bowl" with a reservoir by means of a hollow tube.

It will be safe to make the assertion that, at the beginning of the eighteenth century, what is to-day known as exstrophy of the bladder did not exist and was not known as such 200 years ago. That there were cases then, as now, no one will question, but that they were not recognized, nor the true significance of the defect understood, must be admitted. The coming of the nineteenth century brought with it a fairly good knowledge of what to-day is known as exstrophy of the bladder. Yet, leaving out the Jurine apparatus, very little advance had been made in attempts at treatment. Cases were recognized and reported with greater frequency, to be sure, and they had to a certain extent lost their novelty. In 1805 Duncan collected 50 cases; in 1828 Earle collected 68 cases, and in 1833 Velpeau, about 100 cases. But if the profession as a whole understood what had taken place, it was far from being a unit as to the cause. It is to be observed, as significant of the trend of thought at this time, that when a case was reported, it was not deemed sufficient to record the facts as found, but at the same time to theorize as to the cause of this unfortunate side-step on the part of nature. To think of "granting nature the exercise of reason in her operations," shows that man must have been keeping a somewhat close watch on Dame Nature and her methods. As showing the interest which had developed at the time, there appear in the *Edinburgh Medical and Surgical Journal* for 1805, three articles on this subject. One was by W. H. Coates, presenting the case of a female with the peculiarity that the symphysis was perfect. Another case was in a female, reported by Sir Astley Cooper, where the ureters were increased in size to that of the rectum, and a masterly review of the existing literature on the subject by Andrew Duncan, Jr.

Dubois and Dupuytren suggested, in 1806, that it might be advisable in these cases to attempt to bring the defective pubic bones in apposition at the median line by the application of a compression bandage. Soden, in 1808, reports a case which was peculiar, in the difficulty with which the sex of the child was determined upon.

In 1827 Hamilton presents the first case which appears in the literature from an American. This case was of unusual interest, because of the patient being delivered of a child at the age of 40, and subsequently lived to the age of 80 years. In 1832 is found an admirable description of this condition by J. J. Schneider, and also an exhaustive thesis on the same subject by J. L. A. De Quatrefages.

During the remainder of the first half of the nineteenth century, there are found among many reports of cases, a few suggestions as to treatment, all of which were tried and usually found wanting. One was the method of Earle, where cauterization of the exposed mucous membrane was resorted to. Mowatt and others made the attempt to dilate the ureters in the hope that they could be made to take the place of the defective bladder. Wattman, Gerdy and Langenbeck's cases are noted, in which attempts were made to close the cleft by sutures.

The suggestion by Delpech, Bünger and Froriep that flaps of skin from adjacent surfaces might be utilized were all recorded before 1850. At that time McWhinney presented a very exhaustive paper on the subject, covering thoroughly the literature up to that date.

During the sixth decade, remarkable progress was made. Chance, in 1852, as an introduction to a presentation of two cases, says: "To the surgeons such cases are interesting because hitherto, as far as I know, they have entirely baffled every attempt at treatment. To the physiologist, however, they are still more so, because the agreement between them is so great that it proves such malformations are not the mere result of accidental erroneous development, but arise from some specific error acting invariably in the same manner, the nature of which error has not as yet been exactly determined." Following this, are the suggestion of Roux, that the ureters be transplanted to the rectum, and the operation of Mr. Simon, namely, ureterorectal anastomosis; that of Mr. Lloyd and Mr. Athol Johnson, vesicorectal anastomosis. Then came the first typical flap operation, that by Roux, who was succeeded by others; the decade ended with the comparatively successful cases of Drs. Pancoast and Ayres.

Despite this increase in the literature, that the condition of exstrophy of the bladder was still quite a rarity is shown by the report of Porter, in 1855, in an article entitled, "Bladder Outside of the Belly," where he gives a very accurate and complete description of a case, in part as follows: "A monstrosity so rare that comparatively few physicians of this country have ever had an opportunity of seeing it. Dr. Gross, of Louisville"—later of Philadelphia—"has seen but one, and that the individual in question. Professor Eve has seen two others, one of them in Great Britain. About 70 cases have been recorded in Europe, and a dozen in the United States. *And, alas! there is no remedy for this dreadful deformity.*"

From 1860 till 1870 the flap operation was employed almost exclusively; and it was during this period of time that the method approximately reached perfection. Holmes presented a number of successful cases, on one of which he performed a vesicorectal anastomosis, on the principle of Lloyd, but by a different method. Wood introduced his method, which was destined to become the preferred flap operation. He operated on many cases, with remarkably few failures. In 1867, Thiersch presented to the profession a variation in the flap procedure, that is, the use of granulating flaps. During the next decade, in the vast majority of cases operated on, flaps were utilized. In this period, the method presented by Wood was repeated and underwent many modifications. The same can be said of the Thiersch method, but to a less extent. In 1872, Rose attempted to control the incontinence by making a communication between the vagina and rectum, and then diverting the urine into the rectum by closing the vagina. In 1876, Levis presented his ingenious procedure, and in 1879, Thomas Smith repeated the principle of Mr. Simon's operation. In 1881, Thiersch repeated the procedure of Holmes, in making a vesicorectal anastomosis. Glück and Zeller reported the result of their experimental work on dogs, and Sonnenburg presented his method. In 1885, another variation is advanced by Trendelenburg in his method, which might be called the osteoplastic. The remainder of the decade was occupied in repeating or slightly modifying the methods already presented. At the close of this decade, in 1889, Segond reported a new feature, being in reality a modification of Sonnenburg's, but still characteristic enough to be differentiated by his name.

At the beginning of the tenth decade, a great deal of work was being done experimentally in the implantation of the ureters into the rectum, on the lower animals. A few such procedures had been undertaken on the human being, but with an unfavorable outcome, by Küster, in 1891, and Chaput, in 1892. R. H. Reed, in 1892, did some very interesting experimental work; and, in 1893, Van Hook, in his notable work on the ureter, devoted some time to ureteral implantation. In 1894, Maydl presented his method of ureteral implantation, which has met with almost universal success. Boari, in 1896, brought before the profession a device, resembling in some respects the Murphy button. This was followed by Chalot's aparatus, in 1897.

After the introduction of Maydl's method the authorities seem to have become divided. One class believed in the efficiency of the "valve"—the normal ureteral opening—to prevent ascending infection; while others considered this, as a safeguard, practically worthless. Those lacking confidence in the trigone as a barrier against ascending infection worked with the object in view of devising some method by means of which infection would be effectually prevented from involving the ureter and kidney; and those who were satisfied with Maydl's operation for exstrophy, carried on the same work with the complete removal of the bladder—as in tuberculosis and neoplasm—as the end in view. In 1896, Krynski and Vigoni published, each a work along this line. Pousson reported also some interesting cases, and has tabulated 52 operations, by various methods, since 1889. These were followed in the next year by Pisani, who, in so far as he preserves the trigone, has merely modified the principle of Madyl. Mathes reviews the subject of ureteral implantation into the intestine, and reports two cases operated on by Eiselberg, after the Maydl method.

Toward the close of the century, and especially during the last few years, the literature has increased at a wonderful rate. During 1898 and 1899, Fowler and Martin each present a work on this interesting phase of the subject. The years 1899 and 1900, are found to be very prolific of contributions on this no longer neglected subject. Maydl reviews the operations by his method. The cases of Allen, Josserand, and Herczel add to the list, without increasing the mortality rate. Among other recent additions to the literature are: The masterly review of the subject by Mazel;

the brief, concise, thorough and very interesting discussion by R. Matas; the extremely interesting plastic operations of Rutkowsky and Mundell; the revival of the vesicorectal anastomosis in a much more practical method by J. Frank; the successful bilateral axial implantation for tuberculosis by C. Beck, of Chicago, and another for sarcoma by Krause; the unilateral case by Lenden, and the experimental work of Kalabin; the utilization of Sonnenberg's method by J. Rilus Eastman; the employment of the skin-flaps by Wheaton, Means, De Forest Willard, Shimonek and others; and the very recent experimental work reported by Peterson.

TREATMENT.

In considering the treatment for exstrophy of the bladder, the different methods may be classified under palliative and radical. The former includes all methods which, when completed, do not give to the individual control over the evacuation of urine; the latter includes all methods wherein the result does admit of the patient retaining the urine for a variable length of time. The object of the palliative method is, primarily, the covering and protecting of the tender mass of tissue; secondarily, the formation of a cavity variable in capacity, with usually no sphincter-action at its orifice, or if present, very weak and inefficient; and thirdly, the placing of the structures in such a manner that the out-flowing urine may be more easily conveyed into a suitable receptacle. By the radical measures the object in view is to utilize the sphincter ani as a sphincter, and the rectum, or some portion of the intestinal canal, as a receptacle. The sphincter vesicæ is beyond recall, and in consequence the sphincter nearest at hand is called into service. Many attempts at repairing of the sphincter vesicæ have been undertaken, but with almost uniform failure. But the method of treating epispadias, suggested by Trendelenburg, if carried out in conjunction with the flap operation, may some time produce quite an efficient sphincter. Trendelenburg cites a case which, after operation, could retain the urine for three hours. The fact, that in suprapubic cystotomy the opening may and does assume the properties of a sphincter, has been cited, but it must be remembered that this sphincteric action is due to the part played by the recti abdominalis muscles, which are in apposition, and the suprapubic opening between them. In exstrophy the recti muscles are separated from each other for a distance of from 1 to 3 inches, and, therefore, can not exert any sphincteric action.

A—Palliative.

I.—Apparatus.

II.—Flap. 1. Of skin: *a,* epidermis in (reversed); *b,* epidermis out. 2. Of mucous membrane: *a,* remaining bladder wall of patient; *b,* intestinal wall of patient; *c,* bladder wall of lower animals.

III.—Suture of edges of fissure: 1. By direct suture. 2. Preceded by preliminary measures.

IV.—Miscellaneous: 1. Dilatation of ureters. 2. plaster bandage. 3. Catheters in ureters. 4. Fistula in perineum. 5. Ureters inserted into the urethra. 6. Nephrectomy on one side and lumbar ureteral fistula on the other.

B—Radical.

I.—Axial implantation. 1. By sutures. 2. By apparatus.

II.—Vesicorectal anastomosis.

III.—Implantation of trigonum vesicæ.

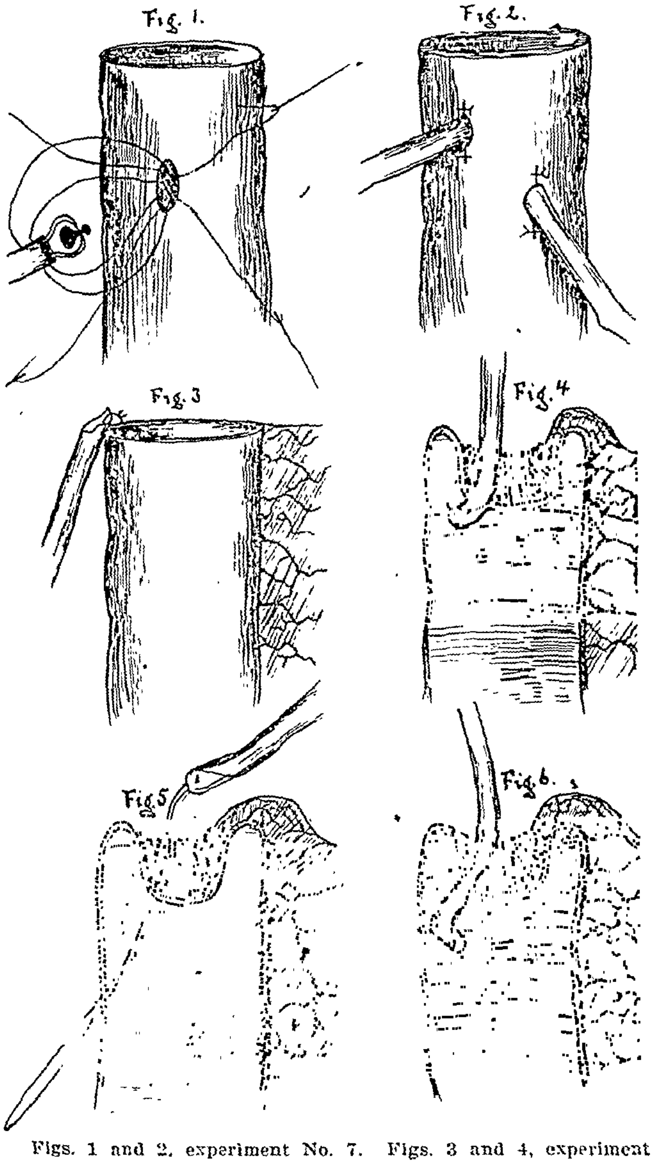
IV.—Implantation in a manner imitating normal insertion into the bladder; or an attempt to make a valve.

V.—Miscellaneous. 1. Vesico-vagino-rectal fistula, with colpocleisis. 2. Artificial anus; ureters inserted into rectum. 3. Artificial bladder: *a,* opening into urethra; *b,* opening into intestinal tract.

Palliative.—A. I. Apparatus. The efforts in this direction consisted in the application of an apparatus to cover the exposed mucous membrane. Jurine, of Geneva, was the first to contrive an apparatus meeting the requirements, which became known as the "Jurine bowl." This receptacle was attached to the anterior wall of the abdomen, immediately over the exstroverted bladder, and held in place by means of a belt and buckles. Being detachable, it was removed at night, cleaned and replaced each day. When properly applied, this contrivance controlled to a great extent the offensive odor. Likewise, it protected the delicate mucous membrane of the bladder, prevented excoriation of the adjacent integument by intercepting the escaping urine, and altogether was a priceless boon to the healthy, active young person thus afflicted. Bonn, of Amsterdam, in 1781, was the first to recognize the advantages of this apparatus. He modified the same and, as well as others, used it quite extensively, thus really introducing and establishing its merits. See Plate v, Fig. 1. This form of treatment was further improved by Roofe, in connecting the bowl with a reservoir by means of a tube. Another step in the treatment was the recommendation of Earle, that by cauterization of the mucous membrane, new connective tissue would form, which in contracting would reduce in size the space to be covered and at the same time lessen the sensitiveness of the area on which the bowl or shield would rest. This method of treatment in exstrophy of the bladder, though the oldest, is still recommended at the present day by many authorities. See Plate v, Fig. 2. "An instrument for everted exstrophy of bladder consists of a metallic or hard-rubber shield, to the lower extremity of which is attached an elastic tube, leading to a soft-rubber pouch, to collect the urine. This is buckled to the thigh, or may be carried down to the boot."

A. II. Flap, 1*a.*—Roux was the first, in 1852, to perform the regular flap operation, that is, the dissecting up of a portion of skin, leaving it attached at one point, its base, and turning it over as a leaf in a book on the exstrophied mass, with the epidermis in. He used an abdominal and a scrotal flap, which were sutured over the mass. The stitches yielded and the flaps sloughed. Richard, in 1853, resorted to a modification of Nélaton's method of treating epispadias. He brought down an umbilical flap reversed. Then he dissected a scrotal bridge-flap, which was placed on the umbilical flap. This was the first application of superimposed flaps. The reversed flap with wound surface out was covered by the bridge-flap with raw surface in, thus giving normal epidermis on the outside, and the two wound surfaces in contact. Alquié, in 1856, used superimposed flaps, but added the new feature of effecting this in two steps. He was the first to make the flap operation in more than one sitting. Pancoast, of Philadelphia, in 1858, made the first successful flap operation. He used lateral semilunar flaps and sutured them in the median line. Primary union resulted, except at the inferior angle, which point was to have been operated on at a future time. But the patient died of pneumonia two months after the first operation.

PLATE III.



Figs. 1 and 2, experiment No. 7. Figs. 3 and 4, experiment No. 8. Figs. 5 and 6, experiment No. 10.

Ayres, of Brooklyn, in 1858, was the first to report a successful case. A single curvilinear abdominal flap was employed, resulting in primary union of all except at the lower part of the line of union. This small opening was closed at a subsequent operation. This case was peculiar, in that the patient had been delivered of a child two months previous, with a resulting prolapsus uteri, which disappeared as a consequence of the operation. Holmes, in 1862, used lateral, superimposed flaps, the superior border of the flap being sutured to the abdominal wall at a second sitting. He has reported five cases with three successful results. The flap method which has met with the most favor and has been performed with success, such as accompanies a successful flap operation, is that performed, in 1863, by John Wood, of London. See Plate v, Figs. 3 and 4. On account of its popularity, his own words will be quoted in a description of the operation.

> The upper flap should be figured by a line extending along the side of the bladder surface vertically upwards as far as the measured distance from the root of the penis to the upper margin of the bladder and then carried in a rounded curve across the "linea alba" at this point to join another vertical line of equal length on the opposite side of the bladder. The two groin flaps for superposition are to be made of a rounded lancet-shape, with their roots downwards and inwards at the base of the scrotum and continued along the side of the urethral groove for about half its length.
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> These flaps should be long enough and detached enough to meet in the median line for their whole length and no sharp angles should be left in their outline. The incision for making them should join that of the lateral border of the first or umbilical flap at about its center. In raising the umbilical flap care must be taken not to make the skin too thin, which is apt to be done in the center of its base near the upper margin of the bladder. At this point there is little or no subcutaneous tissue and the aponeurotic and tense linea alba is thin and easily injured by the knife, consequently the greatest care is required to avoid opening into the peritoneum or subperitoneal fascia.
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> It is better to lay hold of the flap with the fingers than to use the forceps, which are apt to damage the vitality of the edge of the flaps, on the direct union of which a good deal of the success of the operation depends. In raising the lateral or groin flaps the superficial external pudic vessels are divided, and are often large enough to require ligature.
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> The upper or umbilical flap should first be dealt with, folded evenly down with its skin surface to the bladder, its corners being stitched with thickish wire sutures to the cut edge at the root of the penis on each side.
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> The groin flaps should then be placed on the raw surface of the umbilical flap, with their inner edges held in contact along their whole length by six closely-applied wire sutures. The bases of these flaps should pretty closely embrace the root of the penis. The raw surface left by the reflection of the umbilical flap can be easily covered by drawing its edges together with three or four strong and long harelip pins, which have the effect of relieving any strain which may affect the reflected flap. At this stage of the operation the patient's shoulders should be well raised and his knees bent and adducted; to diminish the stretching of the abdominal parietes. The upper borders of the groin-flaps may be held upwards by one or two thick wire sutures, but the site of the groin flaps should be left to heal by granulation.
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> In the female, the umbilical flap should be large and the incision for the groin flaps on each side should be carried well down, so as to have their roots in great measure connected with the labia. When they are placed together and stitched on the umbilical reversed flap, the vagina should be almost

closed up by them, with but a small opening to allow the passage of the urine. Through this opening a very large india-rubber drainage-tube should be kept in the vagina and be changed and cleaned daily.

As a supplemental procedure in the male, the operation for the epispadias which remains, and for a preputial covering for the penis, will usually be found necessary.

This method, has been modified very extensively, and is, in fact, the principle upon which is based nearly all the flap operations of to-day. Slight variations and improvements have been presented by Michel, Ashhurst, Le Fort, Bigelow, Greig-Smith, Shrady, Mayo Robson, Wheeler, Marsh, Bennett, Richelot, Rickerts, De Forest Willard, and others. Moury, in 1871, utilizes the scrotum and perineum in forming the flap, which he turns upward and attaches to a short abdominal flap—1 inch—by means of a tongue-and-groove suture. The penis is slipped through a small opening in the center of the scrotal flap, thus allowing the urine to pass without coming in contact with the wound. Several cases are reported with a satisfactory result. Gross, in speaking of this method, says that it is the most eligible for males.

A. II. Flap 1*b*.—Thiersch began the operative treatment of exstrophy by curing the epispadias by his own method. The defect in the bladder was then covered with flaps of skin. He cut three skin flaps. An upper penduneulated skin flap, large enough to cover the whole defect, was taken from the middle abdominal region and turned downward, so that the skin surface was directed toward the mucous membrane of the bladder. This flap was sutured to the previously freshened borders of the defect. At the same time, two lateral bridge-shaped skin-flaps with a double pedicle were marked out and dissected up from the subjacent tissue. These two flaps, which are connected at their ends with the surrounding skin, remain, for the time being, in situ. Tinfoil, oiled silk, iodoform gauze, or the like, are inserted beneath them, and they are allowed to granulate. After a time, these granulating skin flaps are detached at one end, laid over the granulating first flap and sutured together in the median line. In this way the anterior wall of the bladder is composed finally of these three flaps of skin. The skinning over of the granulating defects is hastened by means of Thiersch's skin-grafts. Billroth modified Thiersch's method as follows: He covered the defect with lateral granulating flaps only; a lower and an upper skin flap are taken, which at different sittings are laid over the defect with the granulating surface directed inward.

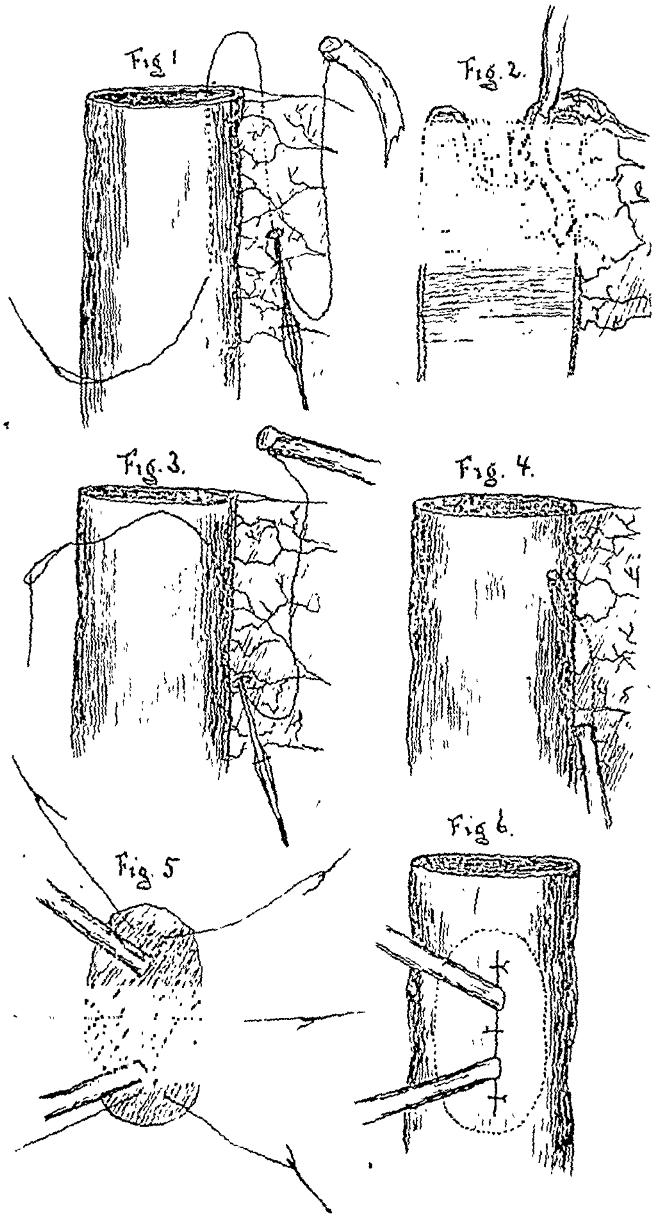
A. II. Flap, 2*a*.—In the reversed flaps one of the most annoying features in the after-treatment was the formation of phosphatic calculi on the hairs which continued to grow on the epidermic surface of the transplanted skin. An effort to exclude this disturbing element was made by Segoud. He dissects up the posterior bladder-wall as far as the entrance of the ureters, and then turns it down so as to make a covering for the groove on the dorsum of the penis. The glans is stuck through the prepuce and the latter is healed on to the bladder flap. The defect resulting from the detachment of the mucous membrane of the bladder is covered with two skin flaps. The urine flows from the ureters into a canal widened above and situated between the groove on the dorsum of the penis and the vesical mucous membrane, which has healed over it. Czerny used the following method: The vesical mucous membrane is dissected up from the periphery toward the center and then united, so as to form a cavity. This cavity is lined throughout with mucous membrane. The skin defects are covered with two lateral bridge flaps.

A. II. Flap, 2*b*.—Rutkowski, in 1899, presented a case in which he used a portion of the intestinal tract instead of skin, or merely mucous membrane, as the material with which to close the defect.' By this method he, too, does away with danger of calculi forming on the hairs. At the same time he repairs a defect in a sero-musculo-mucous viscus by the aid of a sero-musculo-mucous tissue. This is certainly a much more ideal procedure than that where a tissue is employed which is composed of connective tissue, fascia and epidermis, with very little if any contractile muscular tissue or action. His method of procedure is as follows: He resects a loop of small intestine, leaving the resected portion attached to the mesentery. The severed intestine is reunited by an end-to-end enterorrhaphy. The resected loop is divided longitudinally along its convex border, thus giving a broad piece of sero-musculo-mucous tissue—quite similar to the normal bladder which is sutured into the defect of the bladder. One case is reported which left the clinic two months after operation. Upon dogs, he has watched the change in mesentery and mucous membrane. The vessels of the mesentery become gradually obliterated, and the columnar epithelial cells of the intestine in time are replaced by squamous epithelial cells as in normal bladder.

A. II. Flap, 2*c*.—Mundell, in 1899, having met with favorable results in experiments on lower animals, suggests the following method of using normal bladder tissue with which to repair the defect instead of skin, mucous membrane or intestine. "Transplant a portion of bladder wall of, say, a sheep, to the lower lateral abdominal fascia of the patient. After a period of seven or eight days, the union of the two tissues is sufficiently strong to allow a plastic operation whereby a skin flap, with the bladder attached, may be swung over on the exstruded bladder and the edges of the attached piece of bladder sutured to the defective bladder."

A. III. 1.—Wattman made the first plastic operation in 1844 for exstrophy of the bladder. The normal skin was dissected up to a sufficient extent on each side, then pulled forward and sutured in the median line. This case was not encouraging in the result. Necrosis of the flaps took place and was followed by the death of the patient. Gerdy, in 1845, united the bladder in a manner similar to Wattman's procedure, in two cases. The sutures yielded in both, and in one death ensued in five days. In 1849, Langenbeck made a similar operation. After loosening the skin from the posterior wall, it was drawn forward and the edges held in apposition by the aid of "insect-needles." Additional support was given by the application of adhesive plaster. No record was made of the outcome. Wakely, in 1851, suggested drawing the edges over a silver bowl and then suturing in place. The object was to keep back the posterior wall of the bladder, which in many cases pushed forward and so obliterated the cavity. This was never put into effect. Wyman, in 1885, successfully closed the fissure in a case of exstrophy in a child five days old, by the use of hare-lip pins. The patient died two months later of a cause not associated with the condition or the operation.

PLATE IV.



Figs. 1 and 2, experiment No. 11. Figs. 3 and 4, experiment No. 14. Figs. 5 and 6, experiment No. 24.

A. III. 2.—As early as the year 1806, Dubois and Dupuytren proposed to approximate the fissured wall by means of a compression bandage, thereby advancing the application of lateral pressure. This principle has been used quite extensively during recent years by Trendelenburg, Passavant, Neudorfer and others. The osteoplastic method, introduced by Trendelenburg in 1885, has for its object the restoring of the parts to their normal position. By a separation of the sacroiliac synchondrosis he was enabled to bring the rami of the defective pubes into apposition and so form an artificial symphysis. This was followed by suturing the defect in the median line. The separation of the sacroiliac synchondrosis, in children of 3 years, proved to be a very simple and safe operation. To close the defect in the bladder, borders of skin were freshened and held in apposition by means of silver-wire sutures. If primary union does not take place, a secondary operation becomes necessary. König and Küster modified the operation of Trendelenburg, while still retaining the principle. They performed osteotomy on the anterior portion of the pelvic girdle, instead of separating the sacroiliac synchondrosis. Passavant proposed to accomplish the closure of the pelvic bony gap by the application of "brisement force" under the influence of an anesthetic. This suggestion was carried out successfully by Koch. In 1886, Neudorfer relieved the tension and rendered approximation of the margins possible by means of two lateral horseshoe-shaped incisions—the convexity outward—which included all the structures of the abdominal wall to the fascia transversalis. Before suturing the cutaneous margins, the mucous membrane is detached on each side far enough to allow suturing of the same in the median line. Over this the skin is sutured; the os pubis, after its surface has been freshened, is sutured with silver wire. Mikulicz proceeds as follows: Two lateral curved incisions are made 3 to 6 cm. from edge of the vesical mucous membrane and almost parallel to it. This incision penetrates to, but not through, the transversalis fascia or peritoneum. Two lateral bridge flaps containing the entire thickness of the recti muscles are thus formed. The insertions of the recti are freed by removing a small fragment of the pubic bones with them. The entire flap is then dissected up and transplanted toward the median line. The bladder-wall is then dissected free and sutured in the median line, the sutures not involving the mucosa. The flaps are now united in the median line with silver wire. The lateral wounds are allowed to heal by granulation. Escape of urine is provided for by a catheter in the neck of the bladder. As in other flap operations, at subsequent sittings the epispadias is repaired and then the neck of the bladder receives attention. Schlange recommended practically the same, with the exception that the bladder-wall is not dissected free, thus avoiding the danger of sloughing of this portion of wall. Murry reports a successful recovery of a case in which he employed the simple procedure of dissecting free a lateral flap on each side and then uniting these in the median line with the aid of tension and button sutures.

A. IV. 1.—*Mowatt, in 1735, made the first attempt* recorded to relieve the condition of exstrophy. He endeavored to dilate the ureters by closing their orifices with "a small tent and an astringent plaster over it." This procedure caused the child so much discomfort that he was compelled to cease his efforts at treatment, which were, as well, in the line of investigation. In 1842, Chassaignac resorted to dilatation of the ureters. He closed the orifice by inserting a sound in the hope that the dilated ureter would act as a substitute for the bladder. Turbulent symptoms of urine retention were soon evident and his method yielded nothing of value. Breschet, in 1845, tried the above procedure and fever resulted. Gibb, in 1857, also made an unavailing attempt with the same method. Later, in 1861, Bouisson to this end devised a ureter clamp after the manner of a serrefine. But, as in the other cases treated on this line, no satisfactory result was attained.

A. IV. 2.—A plaster bandage was employed by Johannes Buxtorf in 1749. Thinking the protruding mass was a ventral hernia, he attempted to reduce it and maintain the reduction by employing a plaster bandage. The final outcome was the death of the patient.

A. IV. 3.—Catheters in the ureters were used by Pipelot in 1792, who attempted to remove the inconvenience arising from the continual dropping of urine. He retained them in place and allowed them to empty into a receptacle. This device, ingenious enough in itself, did not accomplish the desired result.

A. IV. 4.—A perineal fistula was made by Levis in 1876. He passed a needle, threaded with wire, through the bas fond of the bladder, through the intervening muscular and connective tissue, and out through the skin of the perineum, midway between the scrotum and anus. In this way he established a fistulous communication between the bladder and perineum. The bladder was covered with scrotal flaps and the deep perineal muscles through which the fistula passed were supposed to impart a sphincteric action. Only two cases were recorded, both of which met with an unfavorable termination. One death was due to peritonitis, and the other to an independent cause.

A. IV. 5.—Ureters inserted into the urethra. This ingenious method was introduced by Sonnenberg, with no attempt at a natural receptacle or sphincter. It is merely a method which is not so dangerous as the radical procedures, and as a result it leaves the patient in a condition more suitable for the application of an apparatus. In 1881 this surgeon extirpated the bladder in an extreme case of exstrophy. The entire posterior wall of the bladder was separated from the peritoneum without opening the latter and the resulting defect covered by sliding over a flap *from the side*. The ureters were dissected up from their normal situation and sutured into the dorsal groove of the penis beneath the edges of the skin flap. The patient's condition was so far improved that he could carry a simple urinal. This method has been repeated with a good result by Nehans, and in this country by J. Rilus Eastman.

A. IV. 6.—*Finally, nephrectomy on one side, with lumbar ureteral fistula on the other*, has been recorded by Reginald Harrison, in 1897. The first step was a removal of the left kidney through a lumbar incision. The second step, eleven months later, consisted of an *extraperitoneal implantation of the remaining ureter into the right lumbar incision*; recovery resulted.

Objections: Against all these palliative operations may be placed the fact that, with a few exceptional cases, no sphincter is provided, and a receptacle large enough for practical purposes is not provided.

Apparatus, as a rule, does not fit, and so leakage occurs. If *attached sufficiently tight to prevent leakage*, pressure necrosis is liable to follow. Likewise, considerable attention is required to keep them clean and inoffensive.

Where a flap of skin is used, the urine comes in contact with the wound or raw surface, often causing infection and sloughing. That normal urine is aseptic has been demonstrated conclusively; but, in the majority of these cases, there exists a cystitis of the remaining bladder wall with occasionally a ureteritis or nephritis, in consequence of which the urine is not innocuous. Partial failure is the rule, necessitating one or more subsequent operations. Mikulicz operated on one case nine times, and Billroth on one case nineteen times in twenty-two months. In cases where the epidermis is turned in, phosphatic calculi often form on the hair, and cause much discomfort to the patient. The posterior wall of the bladder is not pushed back to its natural position in the pelvic cavity, and by its protrusion forward the new cavity is reduced considerably in size. The scrotal tissue, which is utilized in some methods, has been proved to be ill-adapted for use as a primary flap.

Where the remaining mucous membrane of the bladder wall is used, the newly formed cavity is usually too small to decrease the troublesome incontinence to any marked extent. This bladder wall, when removed from its surroundings, frequently sloughs from inefficient blood-supply. The utilization of the intestinal wall, after resection, isolation and enterorrhaphy, is certainly a most formidable procedure. Transplantation of the bladder wall from lower animals, thus far, has only been performed experimentally, and needs further investigation. Necrosis of the transplanted flap is to be expected as a result in many such cases.

The coaptation of the edges of the fissure by direct suture is rarely successful. There exists great tension, which often causes sloughing of the flaps, and in addition the same drawbacks that are to be found in other palliative measures. Matas says, in speaking of the results obtained by the various methods accompanied by preliminary steps: "Nor better functionally is the old and original method of Dubois and Dupuytren, resurrected subsequently in a more formidable and dangerous form by Trendelenburg, Passavant and Neudorfer." A tendency to weakening of the pelvic girdle is present. There is no union in front and an artificial lack of solidity occurs behind. In females undue narrowing of the pelvis may result. Treves stated that "In the most successful cases a urinal can not be dispensed with."

Dilatation of the ureters, the plaster bandage, catheters in the ureters, and fistula in perineum are merely of historic value. In cases in which the ureters are inserted into the urethra no attempt is made to form a bladder or sphincter, the aim being merely to facilitate the application of a receptacle. The method of treatment by a nephrectomy on one side and a lumbo-ureteral fistula on the other is very heroic and results in little, if any, improvement of the patient's condition, the effect being a single lumbar urinary fistula instead of a double one in the pubic region. In this case the normal kidney was removed, which is, by the majority of surgeons, considered unjustifiable.

PLATE V.

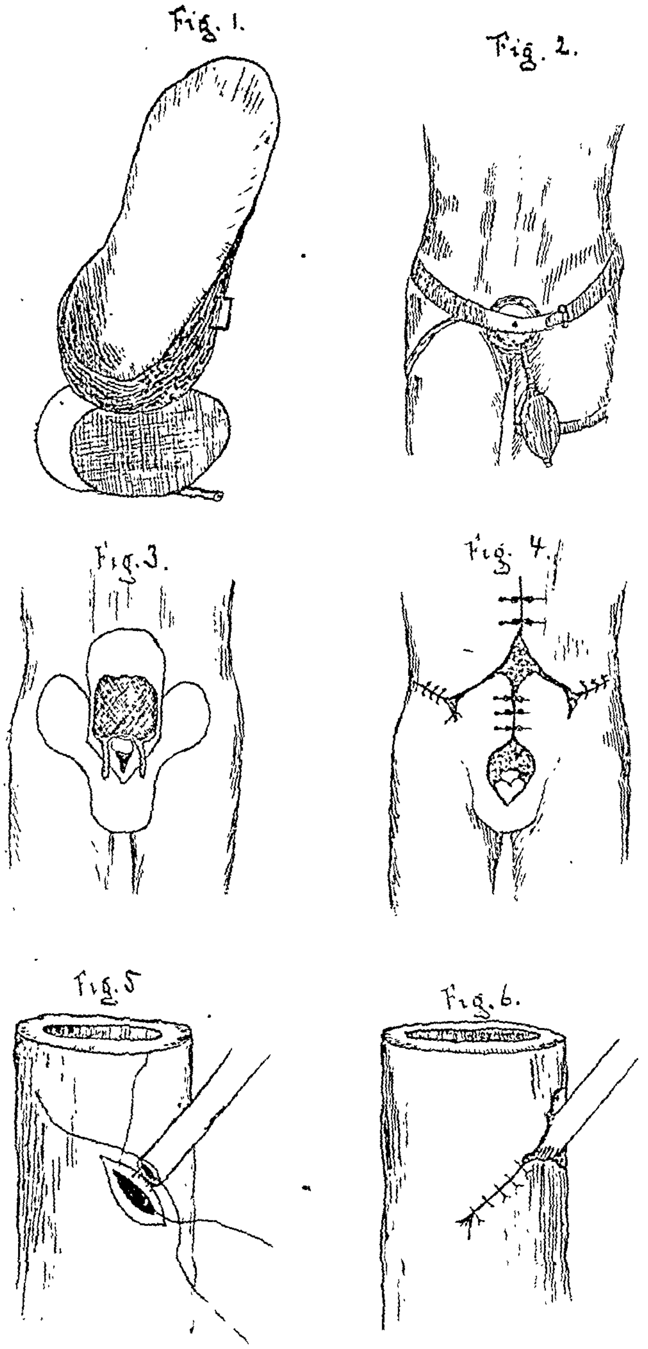


Fig. 1, apparatus worn by Matthew Ussen, 1791. Fig. 2, apparatus recommended at the present time, 1900. Figs. 3 and 4, Wood—flap method. Figs. 5 and 6, Chaput—uretero-intestinal anastomosis.

B. I. 1.—The deviation of the urine into the rectum was first suggested by Roux, of Toulon, and performed independently by John Simon, of London, who, in 1851, performed the first ureterorectal anastomosis. As preliminary investigation he experimented on dogs and found that direct implantation of the ureter presented great difficulties to be overcome, and the result was almost always fatal. Profiting by the experience of Mr. Lloyd, he examined specimens in the British Museum in an endeavor to find how low the fold of peritoneum extended. But this could not be satisfactorily determined. He had a catheter made with a stilet of watch-spring ending in a sharp point, in which was an eye for the thread. On July 5, 1851, he passed the catheter up the ureter and succeeded in perforating its coats and those of the rectum, and by means of forceps in the rectum, brought down the thread. The instrument was then removed so as to leave one end of the thread out of the rectum and the other out of the orifice of the ureter. A fresh thread was inserted in the needle and passed at a point about half an inch lower down in the ureter than was the first, so that two ends of the thread protruded from the rectum and two from the ureter. "Now, to obtain a loop bearing on the coats of ureter and rectum, and dependent on a single thread and without a knot, Mr. Simon tied the two anal ends together, and, pulling on the second thread, effected his purpose. The very same succession of measures were taken on the other side. A slight peritonitis and fits of vomiting followed, but recovery from the operation resulted. Three weeks after the operation, only a slight trickling through the aperture of the ureters was taking place, most of the urine passing into the rectum and being expelled with feculent matter. On the thirtieth and the forty-first day the ligatures came away. Four months after operation, as some urine still escaped the natural orifices of the ureters, and as the artificial orifices were demonstrably patent, an attempt was made to close the mouths of the ureters by needles and hare-lip pins, but this did not accomplish the object sought. "Death within a year, with extreme suffering from disease of ureters and kidneys," occurred. This operation was undertaken with two objects, according to Mr. Simon: 1, the establishing of a fistulous passage into the rectum from the ureters, two to three inches above their termination, where in these cases, they course closely against the bowel; 2, the closing of the terminal part of the ureter, so that no urine might be shed on the surface of the abdomen, but that all might pass into the rectum and thence be discharged per anum. The first was completely attained, and the second had been only imperfectly realized. "On post-mortem examination the ureters were found choked up with calculous concretions, which had been the immediate cause of death. The concretions were chiefly phosphatic. It seems probable that the surgical measures employed had excited inflammation along the mucous surface of the ureters, and that with the mucopurulent secretion there had unfortunately been mixed (as occasionally happens in other mucous inflammations) sufficient mortar-like material to make calculi, which, being retained, became an increased and eventually a fatal cause of ureteral and renal irritation. The preparation showed these concretions and also the free fistulous communication between each ureter and the rectum." The operation of Mr. Simon, properly speaking, was not an axial implantation, being a lateral anastomosis instead; but to simplify the classification it has been included under this heading, with this note as explanatory.

In the *Medical Times and Gazette* of 1872, the following is to be found: "Mr. Jones succeeded in making ureters communicate with the rectum and in closing the anterior orifice of left ureter. The actual cautery is now being applied around the margin of the abdominal aperture, so that by contraction the right ureter may be drawn toward a sort of cloaca which exists between the ureters and rectum. In a second case the communication is also completed between the ureters and rectum. Clamp forceps have also been applied to the anterior ends of the ureters after the introduction of the galvano-caustic. These clamps remained a week and then separated. Still no urine escaped in front, so that it was hoped the case was completed. In a few days a little slough separated, allowing urine to escape in front. In this case all urine passed per rectum for twelve days." Thomas Smith, of London, gives the following report:

> In selecting a spot for connecting the ureters with the bowel it seemed that the lumbar region offered the greatest facilities for the operation, since in this situation both the colon and the ureter could be exposed without injury to the peritoneum.
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> The plan proposed for accomplishing the object in view was the following: To pass a long probe or fine catheter up the ureter from its vesical end as far as the kidney, so as to assist one in recognizing the tube in the cellular tissue of the loins; next, to make the ordinary incisions in the loins as for opening the colon; to find the ureter through the wound, and to pass a temporary ligature beneath it so as to have it at command; next, having withdrawn the probe, to expose the posterior surface of the colon, and dividing the ureter as low down as possible, to insert its upper or renal end through a small incision into the colon and fasten it in position by fine sutures. It was proposed to operate on one ureter at a time and to make the performance of the second operation contingent on the success one might meet with in the first.
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> Operation, June 19, 1879. The ureter was stitched by means of fine catgut sutures to the back of the colon; a small opening being made in the colon, the end of the ureter was pushed into the bowel, so as to protrude about half an inch into its cavity. A fistula in lumbar wound remained, but closed June, 1879.
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> August 28, 1880, fourteen months after the operation, the boy being in good health, the second operation was made on the same plan and with the same object, namely, to introduce the right ureter into the back of the colon. He died fifty hours after the operation.
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> Post-mortem examination, twenty-eight hours after death. The peritoneal surface was quite normal; no trace of inflammation; the lower end of the left ureter was found terminating just above the left common iliac artery. The pelvis of the left kidney was found distended with clear fluid having the appearance of urine; no trace of true renal structure could be found, what remained of the organ being reduced to a fibrous condition spread in a thin layer over the contained fluid.
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> The portion of ureter attached to the kidney measured 1½ inch in length, and terminated on the back of the descending colon; a probe passed down the ureter could not be made to enter the bowel. The right kidney was much enlarged, being as large as the organ in an adult.
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> The capsule adhered to the cortical substance, which was very soft and friable and contained many small cysts; the medullary substance was much softer than natural, but contained no cysts.
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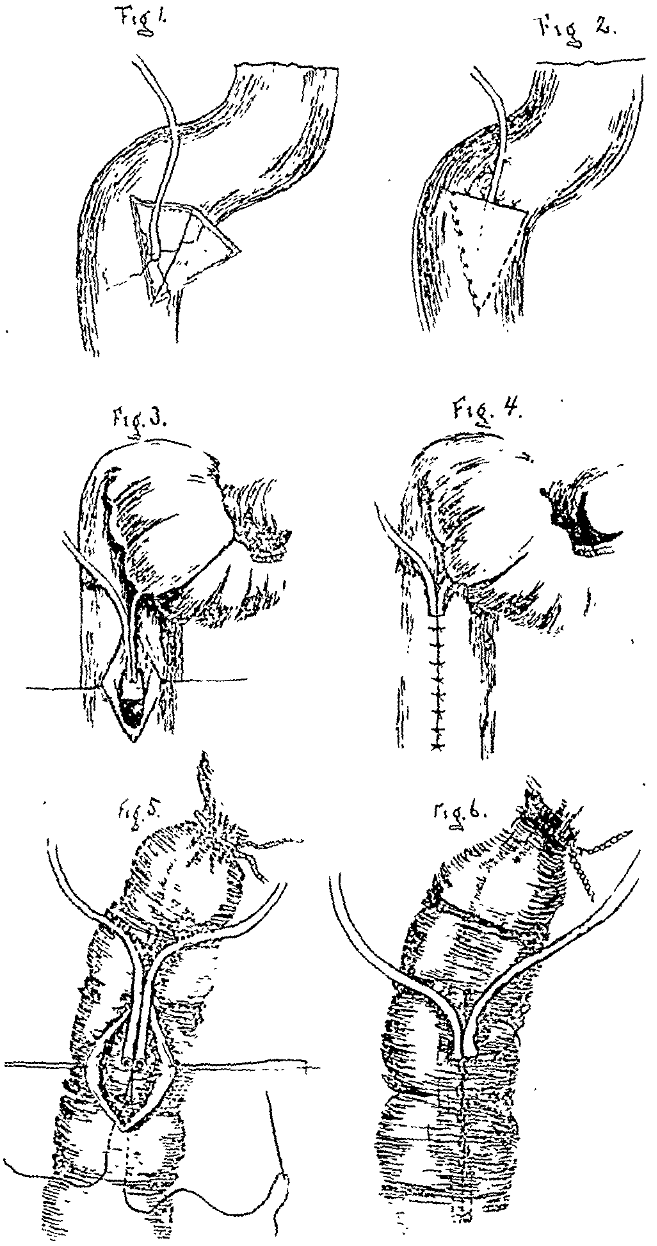
> The pelvis of this kidney and the upper end of the ureter were distended with urinous fluid, and the latter was attached by five sutures to the back of the colon; in the interior of the colon, at its point of attachment to the ureter there was a vascular patch of mucous membrane about the size of a shilling. A small probe could with difficulty be made to pass from the ureter into the cavity of the colon.
>
> It is manifestly one's duty to record the facts of this case for the information of others, since it stands with Mr. Simon's case. I venture to record it as a warning to those who may be tempted like myself, to think that the miseries of ectopia vesicæ can be alleviated by making the ureters discharge their contents into the cavity of the bowel.
>
> Setting aside all difficulties that have to be overcome, and the immediate risks of the operation, it would appear that a permanent and direct communication between the ureter and bowel is of itself a fatal lesion.

These two cases of Simon and Smith, with such unfavorable results, caused the method to wane, and not having met with popularity, it is not again mentioned in the literature until introduced by Gluck and Zeller, in 1881. These surgeons worked experimentally on dogs. Their method was a total extirpation of the bladder, after which the ureters, in some animals, were implanted into the skin, and in others into the rectum. All of the animals in which the intestinal tract was selected for the urinary out-flow died. Novaro, in 1887, made three bilateral implantations on dogs. Two of the animals died, the third lived and was killed thirty days after the operation. Renal infection was reported absent, though no bacteriologic or microscopic examination had been made. Bardenheuer, in 1886, implanted a single ureter in a number of experiments. The animals all recovered from the operation *per se*, but at the necropsy the ureter in each case showed a stricture at the site of implantation, which caused a hydronephrosis. In 1888, Paoli and Buzachi, in four animals, made unilateral implantations. One recovery from operation is reported. Tuffier, in 1888, made experimental implantations into the rectum, but in all cases death resulted from pyonephrosis and general peritonitis. He inserted the ureters so far into the rectum that the ends floated free. R. Harvey Reed, in six cases of bilateral implantation experimentally, met with six deaths, in 1892. In three implantations of a single ureter, one died of peritonitis, one subsequently of ascending infection, and the third resulted in a "perfect cure," no stricture or ascending infection having taken place. This third case was not examined microscopically nor bacteriologically. The method used was as follows: A loop around each ureter, consisting of a double-braided-silk ligature, with ends tied together, and armed with a slightly curved needle. An incision was made about one inch long in the rectum. This loop and needle were inserted into rectum for about an inch in a downward direction, and the needle made to penetrate the wall of rectum and by gentle traction, ureter was pulled into the lumen of the bowel, the aim being to have it from ½ to ¾ inch inserted into the rectum. The rectal wound closed with a continuous suture, which embraced the peritoneum surrounding the ureters and firmly fixed them in the rectum without obstructing the lumen of either ureter. The loops of thread were then put on stretch and cut off close to the peritoneal coat of the bowel. Its elasticity allowed the loops to drop back into lumen of the rectum, while the peristaltic action and the passage of feces would sweep them off the ends of the ureters and carry them out with the stools. There was also incorporated in Dr. Reed's paper the following report: "In the case operated on by Dr. Leet, of Scranton, Pa., where the ureter was implanted into the rectum and the patient recovered from the operation, but died subsequently from an entirely different disease, not connected with the operation, I am told the patient suffered no inconvenience from the ureters being implanted into the rectum. And when a post-mortem was made there was found to be complete union without consequent nephritis. Neither was there stenosis of the ureter." Morestin, in 1892, performed in all sixteen experiments. Ten were bilateral implantations, all of which died, the cause of death being either peritonitis, pyelonephritis or hydronephrosis from stricture. Six were unilateral implantations, three being followed by leakage, and three by stricture. Küster performed, in 1891, on man, a complete cystectomy, followed by implantation of the ureters into the rectum. The patient died on the fifth day after the operation. The post-mortem revealed purulent peritonitis with kidney infection. Chaput experimented on dogs in a great variety of methods, but with almost uniform failure. In 1892, having heard of Reed's successful case on the dog, and considering that the operation could be more easily performed on the human being than on the lower animals, he decided to operate on the human being. For the relief of an uretero-vaginal fistula, he implanted one ureter into the colon. See plate v, Fig. 5 and 6. It is of interest to note that during this operation the iliac vein was opened by mistake, instead of the ureter. The result was called a recovery. Encouraged by the apparently favorable outcome of his first case, he again operated for tuberculosis of the bladder. The left ureter was inserted into the colon on Nov. 25, 1892. Recovery was complete and rapid; the result seemed to be a success. On March 1, 1893, the right ureter was inserted into the colon. Death occurred on the same day. Unfortunately, no autopsy was made. In his procedure the posterior lip of the ureteral orifice is fastened to the still-intact intestine by three or four sutures passed through the muscular layers only. The intestine is then incised for about 1 cm. at a point several centimeters below the preceding row of sutures. The mucous layers of the posterior lips of the two orifices are immediately sutured, and the anterior lips are united by a row of sutures through the muscular wall. The entire end of the ureter should finally be buried at the bottom of a fold of the intestinal wall by means of Lembert stitches so placed that the union will be completely covered for a distance of about 2 centimeters. Rosceszewski, in 1892, made six one-sided implantations, five of which died. Three months after the first operation the remaining living dog was anesthetised and the ureter of the opposite side inserted into the rectum. The animal died of peritonitis. At the autopsy the site of the first inoculation was found to be the seat of a marked stricture, causing a pyonephrosis. Weller Van Hook, in 1893, in his classic contribution to the surgery of the

PLATE VI.



Figs. 1 and 2, Krynski—uretero-intestinal anastomosis. Figs. 3 and 4, Fowler—uretero-intestinal anastomosis. Figs. 5 and 6, Martin—uretero-intestinal anastomosis.

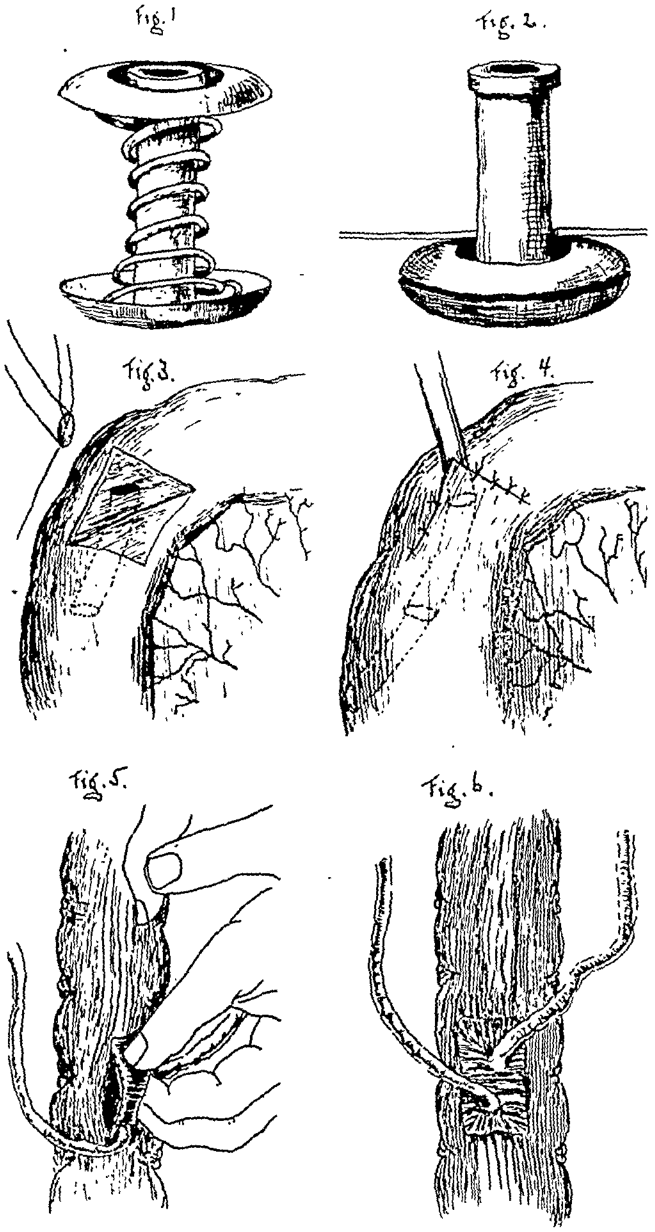
ureters, records some few experiments on the implantation of the ureter into the intestinal tract. After unilateral implantation eight times, five of the animals survived. But following the bilateral operation death occurred in all cases within six days. His method was as follows: After severing the ureter, ligate the cystic end of the duct, and then split the opening of the renal portion of the tube upward for a distance equal to three times its diameter. Cause two small needles armed with a single fine silk or catgut thread to pass from within outward through the split end of the ureter. The ureter is thus grasped in the loop. Now, pass the two needles into the bowel through a small longitudinal slit on the free border and carry them downward about one-half inch. When they are now pushed out through the rectal wall, the ends of the thread may be lightly tied together, drawing the ureter into position and permanently maintaining it there. The operation is completed by covering in the knot with two or more Lembert sutures, closing the rectal wound as well as possible without compressing the ureter, and applying a peritoneal graft. Thompson, in 1893, implanted experimentally into colon and rectum and, in reporting the same, mentions the difficult technic. After implantations into the small intestine, one animal recovered. On necropsy, a moderate hydronephrosis and a slight stenosis of the anastomotic opening was found. He called attention to the peristaltic action, which, by its short duration, but oft-repeated closure of the duct, may act as a causative factor in producing this dilatation. Giordano, in 1894, experimented on fourteen dogs, of which only three lived—77, 84 and 121 days, respectively. He endeavored to improve the results thus far obtained by operating extraperitoneally. Instead of using an anterior abdominal incision, he employed a lumbar, and in some instances even partially resected the sacrum. Duplay, in 1894, operated on a 10-year-old girl, implanting the ureters into the sigmoid, but death resulted. Rein, in 1894, in a case of exstrophy, sutured the ureters into the bowel. The immediate result was satisfactory, but the final result is unknown. Tuffier and Dujarier, in 1896, removed the bladder for carcinoma, after which catheters were fixed in the ureters by means of a stitch that penetrated the wall and its ends were left long. Small openings were now made in the rectum and the ends of catheters, ureters and stitches made to pass through these openings. Catheters and stitches protruded through the anus. Traction on these stitches was relied on to keep up the contact between ureters and rectal wall. The threads were knotted on a forceps and so prevented from retracting. Two months after operation the patient was in good health and able to work. Seven months after operation death occurred. No details were obtainable. Kalabin, in 1898, experimented on twenty-four dogs. On ten he made a bilateral implantation into the rectum, the animals dying in a few days from peritonitis. Fourteen unilateral implantations were made with no better result. In conclusion he states that implantation of both ureters is never admissible, and one ureter is to be attempted only in the most extreme cases. Schnitzler, in 1898, reports two cases of direct implantation, the first for relief of an uretero-vaginal fistula, in which he made an unilateral implantation into the ascending colon, which resulted in recovery. In the second case—carcinoma of uterus—both ureters were implanted, one into the ascending colon and one into the descending colon. In this instance death ensued in a few days, and on post-mortem examination pyelitis was found on one side. C. Beck, Oct. 4, 1899, presented before the Chicago Medical Society a case on which he had operated three months previous. He said at this time there was not the slightest symptom of kidney infection, and gave the following description of his operation: "The operation as performed is a suggestion of Maydl, partly the operation of Dr. Martin, with some modification of my own. The ureters were not implanted in the same line, but one above the other into the sigmoid flexure. The ureters were implanted in such a way that after they had been cut off from the bladder at a distance of an inch the ends of the ureters were dissected, a flap was formed in the gut consisting of peritoneum, subperitoneal tissue and muscular tissue, leaving nothing but the mucosa and submucosa. This flap was turned back and the ureter put underneath it. Underneath the flap a small opening was made and the ureter was drawn about an inch and a half into the bowel, so that the ureter was hanging free, with a portion of it in the bowel. Around this flap the ureter was carefully sutured in a sort of a groove of the wall of the bowel. The peritoneum below was sutured for a short distance." Plate vii, Figs. 3 and 4. Dr. C. Beck lays great stress on the end of the ureter lying free in the lumen of bowel. On account of this fact he expects to prevent infection or stricture. This placing of the free end of the ureter deep into the lumen of bowel was first performed by T. Smith in 1879, and by Tuffier in 1888.

B. I. 2.—Achille Boari, in 1896, presented an ingenious apparatus resembling in many respects the Murphy button, which he had devised with a view to reducing the time consumed in these operations, and also as an aid in securing more perfect union in ureteral implantation. See Plate vii, Figs. 1 and 2. Two successful cases were reported in which the button came away on the eighth and twelfth days, respectively. In neither of these cases had there been any signs of uremia since the operation. Also Chalot, in 1897, advances a mechanical aid, to be used as is the Boari button. It consists of a small tube with olive-pointed ends; a groove or depression, between the bulbous ends, serves to retain the ureter and rectum in contact.

B. II.—Mr. Lloyd, in 1851, attempted to utilize the sphincter ani by establishing a communication between the posterior wall of the bladder and the anterior wall of the rectum. The procedure which Mr.

Lloyd adopted for eventually conducting the urine into the rectum was as follows: He introduced the index finger of his left hand into the anus and glided on that finger a seton-needle armed with a silk thread, to which was attached a thick skein of the same material. There was some difficulty in directing the needle around the pubic ligament from the rectum and close to the prostate into the posterior walls of the bladder, the greatest pains being taken to keep away from the peritoneum; but after a little while the needle was seen to transfix the tumor. The thread was now disengaged from the eye, the lance, which could be taken off from the stem, removed, the handle and stem withdrawn through the anus, and the skein pulled after the thread and made to pass through the protruded vesical walls. Mr. Lloyd considered that the traction exerted downward would cause the urine to pass by the skein into the rectum, and that in all probability a canal might thus be formed which would materially diminish the inconvenience produced by the malformation. The case proceeded pretty favorably up to the fourth day. On the sixth day Mr. Lloyd removed the skein of silk, but the man became much worse and expired on the seventh day after the operation. The body was examined with great care and it was found on opening the abdomen that the immediate cause of death was peritonitis. The rectum had much deviated to the left side of the sacrum and the peritoneum covered it as low down as the anus, so that the seton-needle had passed through the cul-de-sac formed by that membrane so much lower than usual. Thus it became plain how the peritonitis had been excited. Mr. Athol Johnson's case was a repetition of Lloyd's experience. The patient was a child, and death ensued shortly after the operation, from peritonitis. T. Holmes, in 1869, reports a case in which, after performing a flap-operation, he was not satisfied—a sinus persisting—with the result obtained. In an effort to divert the flow of urine into the rectum, he made an artificial communication between the imperfect bladder and the rectum. Profiting by the experience of Mr. Lloyd and of Mr. Johnson, he endeavored to reduce the danger of infecting the peritoneal cavity by using an apparatus similar to Dupuytren's enterotome in making the opening. One blade was placed in the rectum, the other in the bladder, and the two gradually pressed together. In reporting the case Holmes says: "The attempt failed, for though the urine passed in considerable quantities into the bowel, a good part of it still continued to escape above the pubes. I endeavored to obviate this by closing the suprapubic opening altogether by plastic operation. The opening was thus in fact reduced to a sinus. But this caused such intolerable pain when the bladder was distended and such accumulation of sabulous matter in it, that I was fain to abandon the attempt, break open the suprapubic hiatus again and allow the rectal communication to close." Thiersch, in 1881, practically repeated the effort of Mr. Holmes. "In order to avoid the use of a urinal by allowing the urine to flow into the rectum, Thiersch, in the case of a girl, brought about necrosis of the vesicorectal wall by the continuous application of a clamp." J. Frank, in 1899, advises the use of his "bone-coupler," the same as is used for enterorrhaphy, as an aid in establishing a vesicorectal anastomosis.

PLATE VII.



Figs. 1 and 2, Boari-Button, uretero-intestinal anastomosis. Figs. 3 and 4, Carl Beck—uretero-intestinal anastomosis. Figs. 5 and 6, R. Peterson—uretero-intestinal anastomosis.

The operation consists of anastomosing the bladder to the rectum with my decalcified bone-coupler.

The technic is as follows: In a male dog the incision is made in the groin, and in a bitch, in the median line. Generally the bladder is found distended, and is emptied by squeezing it gently with the hand, when the urine escapes through the natural channel. The rectum is next picked up and freed of its contents, as in any intestinal operation. The bladder and the rectum are then brought forward and placed in apposition for anastomosis. Two or three interrupted Lembert sutures are now taken about half an inch below the lower ends of the incisions determined on in the bladder and rectum, care being exercised in selecting them that the coupler, when it is inserted, will not encroach on the ureteral openings in the bladder. A longitudinal incision is then made in the bladder large enough for the coupler selected, and a puckering string applied over and over the cut margin. The rectum is next opened in its long axis and a puckering string similarly applied. The suture should be taken so that the free ends lie uppermost, thus facilitating easy tying. The operator now slips the coupler into the bladder opening, at the same time gently spreading the collars apart, while an assistant makes one knot and draws down on the puckering string until the rubber tubing is felt; another knot is made and the ligature cut off short. The other half of the coupler is then slipped into the rectal opening, and likewise tied and cut off. Several interrupted Lembert sutures are taken around the borders to make the work more secure. The operation is very simple and can be accomplished in ten or fifteen minutes.

He states that of fifteen dogs operated on, ten recovered and five died. This procedure has been performed once on the human subject by A. E. Halstead, of Chicago, the patient living for forty-eight hours, during which time the urine passed per anum with no leakage at site of suture in bladder wall. Death occurred due to shock.

B. III.—Tuffier was the first to propose the implantation of the ureter with its sphincter, its normal orifice, in order to prevent stricture and ascending infection. This is the principle utilized by Maydl in his transplantation of the trigonum. Maydl, in 1894, presents two cases of exstrophy of the bladder which he operated on. It is, in brief, as follows: The bladder-wall is loosened from the abdominal wall; then he opens into the abdominal cavity, at its upper part, and excises from the bladder an oval area containing the ureteral openings. The margin of this area is 1.5 cm. (⅝ inch) away from the orifices. The ureters are carefully dissected out, after having sounds inserted into them. This area, with the ureters attached, is now detached from all surroundings and the remainder of the bladder-wall extirpated. The sigmoid flexure is drawn into the wound and a longitudinal incision made in its convex surface. The isolated area of bladder mucous membrane, with ureteral openings, is now sutured in this incision in two layers, a row of mucous stitches and then the Lembert stitches. The bowel is then replaced in the abdominal cavity and the wound closed with drainage. A permanent drainage-tube is inserted into the rectum. In 1896, he reports three more cases, two of which recovered and one died, the death being attributed to the prolonged narcosis. He reports, in 1899, five more cases, all of which recovered. This method of Maydl, or the principle, that of transplantaing the trigonum, has been repeated quite extensively since its introduction, and has been modified slightly by some operators. Pisani extirpates all of the bladder except the site of the ureteral openings, which is transplanted to the posterior wall of the rectum, through an incision in the anterior wall. The mucous membrane of the posterior wall has been removed for an area equal in size to the surface to be transplanted. He has operated on two dogs; one died at the end of sixty-two hours of collapse, and the second on the sixth day, the post-mortem revealing septic peritonitis. Mauclaire similarly retains the trigone, but the method being so unique in other respects, it has been included under another heading (Artificial Anus). Peterson's method is as follows: "A rectangular flap is formed out of the trigonum, the edges of this flap being made at least one quarter of an inch distant from the ureteral orifices. The sigmoid flexure is drawn downward and incised to a distance equal to the space between the ureteral orifices. This trigonal flap is spread over the incision, so that the orifices open into the incision in the bowel. The external coat of the bladder-flap is united to the bowel by a right-angled continuous suture. The bladder mucosa is pushed inward and the needle passed so that the external bladder wall is inverted and made to rest against the serous coat of the bowel." See Plate vii, Figs. 5 and 6.

The operations based on the plan of Maydl, performed since 1892, are given below, with results:

Date of report.	Operator.	Number of cases.	Recovery.	Death.
1894	Maydl	2	2	
1895	Trendelenburg	1	1	
1896	Maydl	3	2	1
1896	Trombetti	1	1	
1896	Resegotti	1	1	
1896	Krynski	1	1	
1896	Park	1		1
1896	Wölfler	1	1	
1897	Mikulicz	1		1
1897	Ewald	1	1	
1897	Eiselberg	2	2	
1898	Tuffier	1	1	
1898	R. Frank	1	1	
1899	R. Frank	1	1	
1899	Nové Joserand	1	1	
1899	Allen	1	1	
1899	Herczel	3	3	
1899	Maydl	5	5	
		28	25	3

In 1897 Nové Joserand collected seventeen cases, including one by "Tarver," with no reference given. From the available literature, the only "Tarver" writing on this subject appears under the title: "Exstrophy of the Bladder in a Girl of 13 Years; Operation, Relief," in the *Medical Record*, July 10, 1897. This case was not operated on by Maydl's method, nor even a modification of the same. No communication was made with the bowel. Flaps of mucous membrane of the bladder were dissected free and then united, thus forming a small receptacle which held urine for from four to six hours at a time. Of the twenty-eight cases operated on by the Maydl method, or a close imitation of the same, three deaths are recorded, 10.7 per cent. In two cases death was directly attributable to the operation *per se*, 7 per cent. And in this series only one instance is recorded where an ascending infection of the kidney and ureter has taken place, 3.5 per cent. These statistics, as is true of all statistics, must be viewed in the light of a possibility, that additional cases may have been operated on, but having met with an unfavorable outcome, have not been reported. The fact that these cases have lived for a number of years does not of necessity imply that the kidneys in these individuals are not infected. The first case operated on by this method, in 1892, has been lost sight of. The second case, ureters transplanted into sigmoid in 1892, is reported in 1899 as being in perfect health, thus making the duration of the trial extending about seven years. The first case of uretero-rectal anastomosis on record in which the safeguard, the trigonum, was not preserved, lived for nearly one year and then

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B. IV.—In order to prevent ascending infection, which was found to be so frequent a sequel following implantation into the bowel, other methods were devised with a view to the formation of an artificial valve at the seat of the anastomosis, or in cases where the natural orifices could not be transplanted. The effort was made to make the union with the intestine in such a manner as to imitate the natural oblique course of the ureteral insertion in the normal bladder. Kryinski, in 1896, turns back a triangular flap of rectal tissue composed of serosa and muscularis, and attaches the ureters in this exposed area; then makes a small opening in the submucosa and mucosa for the escape of the urine. The triangular area is then replaced and sutured in position over the ureteral ends. *See Plate vi, Figs. 1 and 2.* Vignoni, in 1896, made a V-shaped valve from the rectal wall; attached the ureters to this flap, and covered all by suturing the wound-edges over the valve. Fowler, in 1898, combined the advantages of a "valve" with those of an oblique insertion of the ureter into the rectum. See Plate vi, Figs. 3 and 4. He makes a longitudinal incision in the bowel down to mucosa, the edges of which he dissects and retracts laterally. Then he cuts a flap in the mucosa, tongue-shaped, with its base up. This flap is folded on itself, with a mucous surface on each side, and fastened in this position with sutures. The ureters are fastened to this flap, and then the flap, with ureters attached, is pushed into the lumen of the rectum, and the wound closed, the mucous membrane first, followed by Lembert stitches which extend considerably above the distal extremity of the ureter. His procedure differs from that of Vignoni in having the ureteral openings in contact with a mucous instead of a fibrous surface, and hence less liability to contracture or *stenosis.* *Franklin H. Martin* reports and exhibits specimens from three animals in which he had transplanted the ureters into the intestinal canal. Specimens were removed in four, eleven and twenty-two months. Two were single and one double, and in each case kidney infection was present. These three cases were the successful results in a series of thirty-four experiments. This demonstration was shortly followed by a presentation of a new method of making the union. See Plate vi, Figs. 5 and 6. This, in brief, consists of the following steps: 1. Dissecting ureters free for a distance of 3 inches; ligate and cut. 2. The ureters are placed side by side and approximated in this position by stitches, which do not enter lumen of ducts. One suture penetrates adjacent walls of both ureters near orifices. This suture is left long and is armed with two needles. 3. A 2-inch long incision is made in upper wall of bowel, penetrating peritoneal and subperitoneal tissue only, and exposing an oval surface of mucosa 2 by 1 inch. 4. Strip bowel of contents and apply clamps; make small incision through remaining coats of bowel at about one-third distance from lower end of denudation. This opening must be large enough to admit the two ureters without pressure. Insert the two needles into lumen of bowel through this opening and bring them out, slightly separated, through the wall at a point about an inch below the opening; that will be a little below the lower border of denuded area. Now pull ureters into where the stay sutures make their exit. 5. Place ureters at right angles to the bowel. Secure them to fibrous and mucous coats of bowel by means of a number of sutures, taking care not to penetrate into mucosa of ureter or to cause a constriction of the tubes. 6. Bury ureters in muscular coat of bowel by folding it over them for a distance of 1 inch and securing it to ureters by fine silk sutures. 7. Peritoneal coat is united over the ureters until they divide, and under them above the point. 8. Close abdomen, with gauze drain. The following "principles of the operation" are presented: 1. The uterers empty into bowel in the direction of its long axis, and urine is discharged in direction of the fecal current. 2. The ureters are buried in the walls of the rectum for an inch or more: the act of defecation will empty the ureter bladder. A longitudinal incision is then made in the bladder large enough for the coupler selected, and a puckering string applied over and over the cut margin. The rectum is next opened in its long axis and a puckering string similarly applied. The suture should be taken so that the free ends lie uppermost, thus facilitating easy tying. 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In 1897 Nové Joserand collected seventeen cases, including *one* by "Tarver," *with no reference given*. From the available literature, the only "Tarver" writing on this subject appears under the title: "Exstrophy of the Bladder in a Girl of 13 Years; Operation, Relief," in the *Medical Record,* July 10, 1897. This case was not operated on by Maydl's method, nor even a modification of the same. No communication was made with the bowel. Flaps of mucous membrane of the bladder were dissected free and then united, thus forming a small receptacle which held urine for from four to six hours at a time. Of the twenty-eight cases operated on by the Maydl method, or a close imitation of the same, three deaths are recorded, 10.7 per cent. In two cases, death was directly attributable to the operation *per se.* 7 per cent. And in this series only one instance is recorded where an ascending infection of the kidney and ureter has taken place, 3.5 per cent. These statistics, as is true of all statistics, must be viewed in the light of a possibility, that additional cases may have been operated on, but having met with an unfavorable outcome, have not been reported. The fact that these cases have lived for a number of years does not of necessity imply that the kidneys in these individuals are not infected. The first case operated on by this method, in 1892, has been lost sight of. The second case, ureters transplanted into sigmoid in 1892, is reported in 1899 as being in perfect health, thus making the duration of the trial extending about seven years. The first case of uretero-rectal anas-

tomosis on record in which the safeguard, the trigonum, was not preserved, lived for nearly one year and then died with infected kidneys. The case of Richardson, in which the urine passed per anum for seventeen years and then finally died "of fever," may be cited again in this connection. Cases of chronic cystitis may live comfortably for years without any symptoms of ascending renal infection; and, more rarely, other cases do acquire a pyelonephritis; the reason for this different behavior of these cases can only be surmised. It is claimed by some that even if infection may occur, the operation is nevertheless a justifiable procedure, because it allows the individual to become a useful member of society, at the same time enabling him to indulge in the customs of his associates as does the normal person. This state of affairs, it is claimed, if even for a short time, is to be preferred to a longer lease of life under circumstances which at best will make it pitiable. That the rectum will tolerate the presence and accumulation of the urine for a variable number of hours has been conclusively demonstrated by this series of operation and others, and also by the experimentation on the lower animals. In only two of the above cases was there incontinence, the others retaining the urine without any difficulty for from three to seven hours, and in one instance as long as ten hours. The Maydl method has not been employed extensively in experimenting on the lower animals; and in the few instances where it has been repeated on dogs the results have been essentially different from those obtained after operating on man. Kalabin has performed this particular method on five dogs, all of which died in from three to five days. R. Matas undertook to repeat Madyl's typical operation on two dogs, with death following in twenty-four and thirty hours, respectively, from septic peritonitis, evidently caused by infection from the bowel during the operation.

B. IV.—*In order to prevent* ascending *infection,* which was found to be so frequent a sequel following implantation into the bowel, other methods were devised with a view to the formation of an artificial valve at the seat of the anastomosis, or in cases where the natural orifices could not be transplanted. The effort was made to make the union with the intestine in such a manner as to imitate the natural oblique course of the ureteral insertion in the normal bladder. Kryinski, in 1896, turns back a triangular flap of rectal tissue composed of serosa and muscularis, and attaches the ureters in this exposed area; then makes a small opening in the submucosa and mucosa for the escape of the urine. The triangular area is then replaced and sutured in position over the ureteral ends. See Plate vi, Figs. 1 and 2. Vignoni, in 1896, made a V-shaped valve from the rectal wall; attached the ureters to this flap, and covered all by suturing the wound-edges over the valve. Fowler, in 1898, combined the advantages of a "valve" with those of an oblique insertion of the ureter into the rectum. See Plate vi, Figs. 3 and 4. He makes a longitudinal incision in the bowel down to mucosa, the edges of which he dissects and retracts laterally. Then he cuts a flap in the mucosa, tongue-shaped, with its base up. This flap is folded on itself, with a mucous surface on each side, and fastened in this position with sutures. The ureters are fastened to this flap, and then the flap, with ureters attached, is pushed into the lumen of the rectum, and the wound closed, the mucous membrane first, followed by Lembert stitches which extend considerably above the distal extremity of the ureter. His procedure differs from that of Vignoni in having the ureteral openings in contact with a mucous instead of a fibrous surface, and hence less liability to contracture or stenosis. Franklin H. Martin reports and exhibits specimens from three animals in which he had transplanted the ureters into the intestinal canal. Specimens were removed in four, eleven and twenty-two months. Two were single and one double, and in each case kidney infection was present. These three cases were the successful results in a series of thirty-four experiments. This demonstration was shortly followed by a presentation of a new method of making the union. See Plate vi, Figs. 5 and 6. This, in brief, consists of the following steps: 1. Dissecting ureters free for a distance of 3 inches; ligate and cut. 2. The ureters are placed side by side and approximated in this position by stitches, which do not enter lumen of ducts. One suture penetrates adjacent walls of both ureters near orifices. This suture is left long and is armed with two needles. 3. A 2-inch long incision is made in upper wall of bowel, penetrating peritoneal and subperitoneal tissue only, and exposing an oval surface of mucosa 2 by 1 inch. 4. Strip bowel of contents and apply clamps; make small incision through remaining coats of bowel at about one-third distance from lower end of denudation. This opening must be large enough to admit the two ureters without pressure. Insert the two needles into lumen of bowel through this opening and bring them out, slightly separated, through the wall at a point about an inch below the opening; that will be a little below the lower border of denuded area. Now pull ureters into where the stay sutures make their exit. 5. Place ureters at right angles to the bowel. Secure them to fibrous and mucous coats of bowel by means of a number of sutures, taking care not to penetrate into mucosa of ureter or to cause a constriction of the tubes. 6. Bury ureters in muscular coat of bowel by folding it over them for a distance of 1 inch and securing it to ureters by fine silk sutures. 7. Peritoneal coat is united over the ureters until they divide, and under them above the point. 8. Close abdomen, with gauze drain. The following "principles of the operation" are presented: 1. The uterers empty into bowel in the direction of its long axis, and urine is discharged in direction of the fecal current. 2. The ureters are buried in the walls of the rectum for an inch or more: the act of defecation will empty the ureter by a milking process. 3. The ureters are protected by muscular coat of intestine. This coat will hold ureters closed when rectum is aiding in defecation. 4. The ureters are implanted in lower bowel, which is normally empty except when defecating. This method was employed upon nine animals, seven of which died and two recovered. One of those which survived the operation was killed after about three months while in apparent good health. On examination one kidney was found to be infected.

B. V. 1.—Rose, Gallet, and Resegotti report the cases which are included under this section. By making a small vagino-rectal fistula, and then closing the anterior vesical wall, with a closing of the vagina, the urine was conducted into the rectum.

B. V. 2.—Mauclaire advised the following procedure: A section of bowel is made at about the junction of the sigmoid and rectum. The distal end of sigmoid is sutured into the inguinal region or perineum as an artificial anus. The trigone, with the ureters, is placed within the proximal end of the rectum, which is then closed. This operation was performed on man by Gersuny.

B. V. *3a.*—Tizzoni and Poggi conducted a series of experiments on dogs in an effort at making an artificial bladder from an isolated loop of intestine. In the first step, a loop of intestine was resected. At a second, the bladder was extirpated and the ureters inserted into one end of the isolated loop of intestine, the other end of which was connected with the urethra. As a result, incontinence was at first present, but normal evacuation soon followed. They also tried to do the entire procedure at one sitting, but met with failure in every instance.

B. V. *3b.*—Hochenegg suggested an artificial bladder, also of a loop of bowel, but communicating with the intestinal canal.

Objections: The liability to ascending infection of the ureter and kidney and stenosis of the opening of the duct, may be advanced as an objectionable point. Matas says: The operator who cuts off both ureters from the bladder and transplants them into the colon, must experience a certain and unavoidable anxiety—an axiety that only further experience will overcome—that is born of the feeling that he has burned his ship behind him and has staked all his patient's chances, all his hopes, in the hazard of the game. It is the utter and absolute hopelessness of remedying the evil when this does occur that must make any conscientious operator vacillate and question his mind and his responsibility many times over before deciding to embark in so perilous an undertaking."

The above-stated weak points will be found to hold especially true of the methods of axial implantation.

In vesico-rectal anastomsis the normal ureteral insertion, as a safeguard, is retained. The method of J. Frank is undoubtedly a marked improvement over the old and forgotten methods of producing anastomosis. Difficulty may be experienced in perfectly closing the anterior wall of the bladder. The operation is only applicable on the male, and it is noted in this connection that but few cases occur in the female. Martin and Taylor, in the "American Text Book of Genito-Urinary Diseases": "In the cases in which the intestine or rectum opens into the bladder, the bowel and contents greatly aggravate the severity of the inflammation and markedly favor ascending infection."

In implantation of the trignonum vesicæ, ascending infection occurs in some cases of cystitis, where the normal insertion of the ureters is not interfered with. 1. Is it not just as liable to occur, if not more so, after this area of bladder-wall is inserted into the rectum? 2. The so-called "muscles of the ureters," which tend to maintain this oblique insertion of the distal ends of the ducts, are separated from their origin and are hence rendered worthless. 3. According to Fowler, the rectum or sigmoid proper is not a closed cavity in the same sense that the bladder is, and accumulating urine can not exercise pressure to the extent that this occurs in the normal urinary viscus. 4. Danger of the implanted trigone to slough. 5. The existence of a congenital anomaly in the sigmoid or omega colon may occur, in which the mesentery is so short that it will be impossible to drag the colon to the median incision, thus seriously complicating the technique, as in Park's case. (Matas.) 6. The possibility of contaminating the peritoneum, in the course of the vesico-colostomy or subsequently, if sloughing should occur after the operation has been completed. (Matas.) Pisani's mode of procedure seems to present no particular advantage. Peterson has in no way decreased the time consumed, nor rendered the danger of kidney infection or peritoneal infection less.

The "valve" or particular manner of inserting the ureters into the wall of intestine, will, in all probability, prevent gross macroscopic contamination, but will be ineffective as a barrier against microscopic infection. The experiments thus far have not been particularly encouraging. Thompson, in speaking of the peristaltic action, considers it not a desirable point, but on the contrary regards the occlusion, short in duration but oft repeated, as a causative factor of hydronephrosis. This in itself is predisposing to infection.

1. In vesico-vagino-rectal fistula there exists the difficulty of establishing a water-tight communication from the ureteral orifices into the rectum. There are also the same objections as to others in this division. Ascending infection is reported in one case (Rosegotti), operated on in this manner. 2. The artificial anus theoretically is a marked improvement on the other methods, as the ureters open into, and the urine is conveyed to, a cavity comparatively sterile. The formation of an efficient sphincter for the bowel is doubtful and the resulting artificial anus would be by some considered but little improvement over the original con-

dition. The operation itself is quite formidable. 3. An artificial bladder opening into the urethra approaches in theory very closely the ideal. The mesentery as a band stretching across the abdominal cavity might be a cause of incarcerations and strangulations of the bowel. But practically the procedure would be a most formidable operation. An artificial bladder opening into the intestinal tract is a similarly dangerous undertaking, and as it communicates with the bowel, the new bladder seems to be of no practical value. The method is open to the same objections cited above.

EXPERIMENTS.

The following experiments were undertaken with a view to determine which of the less complicated methods would prove the most desirable ureteral implantation. The form of the report is a condensed table, or list of the experiments, with the results, and followed by supplementary notes in which details deemed worthy of mention are recorded.

EXPERIMENT 1.—The right ureter was inserted into the rectum by the Van Hook method: the animal made an uneventful recovery.

EXPERIMENT 2.—Both ureters were implanted by the Van Hook method and the animal died on the second day after the operation. At necropsy a diffused peritonitis was manifest, and fluid was found in the peritoneal cavity.

EXPERIMENT 3.—The right ureter was inserted, after the plan advised by R. H. Reed; the animal escaped the next morning.

EXPERIMENT 4.—Both ureters were inserted in the same manner as in No. 3, and the animal died thirty-six hours after the operation. Fluid was found in the peritoneal cavity, with peritonitis.

EXPERIMENT 5.—A bilateral implantation, into the rectum was made according to the plan of Chaput. (See Plate V., Figs. 5 and 6). Death followed on the second day from peritonitis and leakage.

EXPERIMENT 6.—A bilateral implantation was made by the method of Krynski. (See Plate VI., Figs. 1 and 3.) The result was about the same as in No. 5.

EXPERIMENT 7.—Implantation of both ureters was made by means of a "metallic nozzle." This contrivance consisted of a small tube with a bulb at one end, and two silk threads, each tied in the middle to the tube at the base of the bulb, and each end of each thread armed with a small round needle. (See Plate III. Figs. 1 and 2.) The needles were passed from within out through the walls of the ureter, at a reasonable distance from its cut end. Gentle traction on these threads drew the bulb into the ureteral orifice. A small opening was next made into the rectum and the needles passed into the opening and out through the rectal wall. Traction again brought the "tube" and ureteral end into the rectum; the threads were then tied on the outside, and the knot covered by a few Lembert stitches. Death resulted.

EXPERIMENT 8.—In this experiment an effort was made in the direction of an artificial bladder—from an isolated loop of intestine—similar to the method adopted by Tizzoni and Poggi. After making a median incision in the abdominal wall and bringing up a loop of intestine, six to eight inches of the bowel was resected, but retaining its attachment with the mesentery. This isolated loop was thoroughly cleansed by flushing with warm sterile water, then wrapped in warm compresses and laid to one side. The divided intestine was then united by circular enterorrhaphy and replaced in the abdominal cavity. The ureters were then located, ligated and divided; the proximal end was then laid on one end of the isolated loop of intestine and attached thereto by a silk suture, penetrating all coats of each. (See Plate III, Fig. 3.) This end of the loop was then invaginated, carrying with it the open end of the ureter, into the lumen. (See Plate III, Fig. 4.) The invagination was fixed in place by sutures. The other ureter was attached in the same manner to the opposite end of the isolated loop, and the middle of the artificial bladder thus made was sutured in the abdominal wound and then opened. The animal died on the second day from peritonitis.

EXPERIMENT 9.—A second operation was done by implantation of the left ureter, one week after the first operation, by the same method, that of Van Hook. Death resulted on the second day. On post-mortem the right side showed slight dilatation; cocci and bacilli were found in the pelvis: left side was negative. Diffused peritonitis was evident, with leakage.

EXPERIMENT 10.—This case was in all respects like that of No. 8, except that the cut end of the isolated loop was first invaginated, and then the ureters drawn into the lumen by the Van Hook method, and attached to the wall beyond the margin of the invaginated end. (See Plate III., Figs. 5 and 6.) The anchoring stitch was covered by Lembert stitches. The animal lived five days. Necropsy showed a general peritonitis, but no leakage. Both ureteral orifices were patent.

EXPERIMENT 11.—An attempt at this point was made to more effectively guard against leakage and infection by drawing the ureter through the v-shaped, triangular space at mesenteric side of the bowel—which is formed by the non-blending of the peritoneum after it surrounds the bowel. (See Plate III, Fig. 5.) A darning needle with a double thread was attached to the ureter, and at a point about 2.5 cm.—1 inch—from the cut end of the isolated loop of intestine, the needle was inserted into and traversed this v-shaped space to the incised edge, where it was brought out. The thread, at its point of entrance into the mesentery, was then grasped by a slender anatomical forceps. (See Plate IV., Fig. 1.) As traction is applied to the needle and thread, the forceps burrows its way to the margin, thus dilating the track of the needle. The forceps is then withdrawn and the ureter is easily drawn into this "sleeve" and out to an extent of about 1 cm.—½ inch. Then the cut end of the bowel is invaginated up to the point of insertion of the ureter. (See Plate IV., Fig. 2.) The ureter is anchored to the wall of bowel as before mentioned in No. 10. (See Plate III., Fig. 6.) The animal died on the sixth day from peritonitis. Both ureters were patent.

EXPERIMENT 12.—A repetition of No. 11 with death resulting on the third day; peritonitis; both ureters patent.

EXPERIMENT 13.—In all respects similar to Nos. 11 and 12, except that only one ureter—the right—was inserted; the opposite end of isolated gut was included in the abdominal wound. Recovery was the result.

EXPERIMENT 14.—Both ureters. In an attempt to retain the advantages of the "sleeve" and to add those of obliquity in implantation into the intact bowel, a variation from the last procedure was adopted. The darning needle and forceps, as used in No. 11, were again utilized. The needle, armed with the thread which is attached to the ureter, is inserted into the triangular space between bowel wall and mesentery, and is made to travel in this space for a short distance. Then the point penetrates the walls and enters the lumen of the bowel. After proceeding in the lumen of the gut for a distance of about 1 cm.—½ inch.—the needle again penetrates all coats and is brought out on the side of the bowel about .5 to 1 cm.—¼ to ½ inch—above the mesenteric attachment. The thread is grasped by the slender forceps, and by the aid of gentle traction, the forceps bores its way through the coats into the lumen of the bowel; then after slight dilatation of this artificial canal, the forceps is removed and the ureter pulled into the bowel, along the passage thus made. (See Plate IV., Figs. 3 and 4.) Death on the third day.

EXPERIMENT 15.—A repetition of No. 14, except that one ureter—the right—was inserted instead of both, with the result that the animal recovered.

EXPERIMENT 16.—Similar in all details to No. 14. Both ureters were inserted by the so-called "sleeve" method, resulting in death on the fourth day.

EXPERIMENT 17.—The animal in experiment No. 15 had recovered apparently. The right ureter had been implanted by the sleeve method into the ileum, five weeks previously. Now the left ureter was implanted by the same method, with the result that the animal might be said to have recovered from the operation per se. But seeing that ultimate recovery was improbable, the animal was chloroformed nine days after operation. The right kidney was a hydronephrotic sac, enlarged to the size of a bladder fully distended. The right ureter was enormously dilated, with complete stenosis of the orifice. In the lumen of the bowel, the site of insertion of the ureter was almost obliterated in the folds of the mucous membrane. The ileum in the vicinity of the inosculation was decidedly hypertrophied. The left kidney, as also its ureter, was slightly enlarged, dilated and congested; the ureteral orifice was patent but reduced in size. Colon bacilli and cocci were present. There were no colon bacilli in the right kidney; a few cocci were present.

Experiment 18.—Both ureters were implanted by the "sleeve" method described in No. 14. Death occurred on the third day from peritonitis.

Experiment 19.—A repetition of No. 18, resulting in death on the sixth day.

Experiment 20.—Trigone. A typical Maydl method was employed. Death resulted in two days; necropsy revealed a diffused peritonitis.

Experiment 21.—The same as No. 20, with the same result.

Experiment 22.—The "sleeve" method, as in No. 14, was again employed. The right ureter was implanted, with a resulting recovery.

Experiment 23.—The same steps were utilized, as in No. 22, with the same result.

Experiment 24.—Left with trigone. A modification of the Maydl method was employed. An effort was made to reduce the number of stitches used and hence decrease the time consumed, and at the same time to lessen the liability of fecal fistula following, as has occurred in a number of otherwise successful cases on the human being. The following steps were employed in this procedure: 1. Removal of the trigone as in the Maydl method. 2. Bringing of the sigmoid into the abdominal incision. 3. An incision about 4 cm.—1½ inch—in length is made in the sigmoid. 4. The removal of the mucosa, by means of a curved curette, from the intestinal wall for a distance of 1 to 1.5 cm.—¼ to ½ inch—in all directions from the opening. 5. In the trigone three sutures are inserted, each armed with two needles, entering on the mucous surface of trigone. (See Plate IV., Fig. 5.) Two needles placed equally distant from the edge of the trigone and ureters, and one between the ureters. 6. The needles are inserted into the opening in the bowel, and are brought out, one on each side of the incision, near its superior and inferior angle, and one in the middle. 7. The trigone, having been folded in such a manner that its size is reduced to the least possible extent, is inserted into the bowel, through the opening made for it. 8. The six needles are removed and the three sutures tied. 9. The knots are covered by means of a Lembert suture. (See Plate IV., Fig. 6.) This method was put into effect only once, on an animal which had one ureter implanted by the "sleeve" method five weeks previous. The animal died on the second day. Necropsy revealed a diffuse peritonitis, probably due to infection at the time of operation. There was no leakage. The right kidney—first operation—showed a hydronephrosis, a greatly dilated sac, with but a rim of kidney tissue at its convex periphery. The right ureter was dilated to twice its natural size. There was absolute stenosis at site of implantation into the intestine, this point being but barely visible on the mucous surface of bowel. The left kidney was congested, but there was no dilatation of pelvis or ureter.

CONCLUSIONS.

The above table shows that twenty-four experiments were made; of these, one animal escaped, the result of which would in all probability have been a recovery, as it was an unilateral implantation, and the series shows that all unilaterals recovered. Of the remaining twenty-three experiments, five recoveries resulted, and in each instance with stenosis and hydronephrosis; this is practically a removal of one kidney. The result attained in the foregoing series of experiments, was not altogether unexpected.

The literature establishes beyond peradventure, that uretero-rectal implantation has been, and still is, a very unsatisfactory operation. Especially is this true in cases where both ureters are transplanted at the same time. The results obtained in experimentation on the lower animals are most discouraging. Matas, in speaking of Maydl's operation on dogs, considers the operation to be much more simple in the human subject, and less likely to be followed by septic infection. Contamination from the bladder or bowel can be much more effectually guarded against, especially if the sigmoid mesocolon is long enough to permit the bowel to be dragged out of the median incision.

Chaput is quoted as saying: "I believe that the difficulty in obtaining good results in these operations on dogs is due in part to the very small size of the ureter in the animal, and in part to the great rigidity of the intestinal walls causing the suture to cut through the tissues and rendering union almost impossible. The experiments on dogs therefore are not to be relied on to furnish material from which to draw valuable conclusions as to the advisability of similar operations on man."

In every instance where both ureters were transplanted, death followed in from two to six days, being due to peritonitis, with or without leakage.

In each instance where a single ureter was implanted at a first operation, the animals recovered from the operation without any bad symptoms, and passed urine per anum, or through the artificial bladder in the case which recovered after the making of such a bladder.

The animals in which the second ureter was implanted at a second operation, died, in a similar manner to those in which the bilateral implantation was done at one sitting. The cause of this peritonitis is difficult to arrive at.

All ordinary precautions were taken against infecting the peritoneal cavity. The same steps were pursued in the preparatory technic, in the same room, and with the same instruments, which were found to be absolutely safe by the same operator in performing intestinal work.

Again, the dogs in which one ureter was transplanted recovered without any signs of peritonitis, but when two ureters were made to communicate with the rectum by the same method and under exactly similar circumstances, the operation was followed by this inflammation of the peritoneum and death.

On necropsy, it was found that in all cases of unilateral implantation, stricture and hydronephrosis resulted. The fluid in the sac was never purulent, but on making cultures of this fluid cocci were found, with a few colon bacilli. In the other cases, when the postmortem was performed within a reasonable time after death, cultures were made, and in each instance both bacilli and cocci were found to be present.

The ureter was implanted into both the large and small bowel, with apparently no difference in result. Unfortunately, the animals did not survive the operation for a sufficient length of time to allow that conclusions of material value be arrived at.

But from the above experiments, there can at least be deduced the conclusion, as confirmatory of others, that the bilateral axial implantation of the ureters into the rectum is at best a dangerous procedure.

Further experiments with the implantation of the trigone will be carried on and reported in the future.

BIBLIOGRAPHY.

Ackerman: Edin. M. and S. J., 1810, iv, p. 32.

Agnew's Surgery: 1881, ii, p. 612.

Allen: Jour. Am. Med. Association, 1899, xxxiii No. 5, p. 258.

Anderson: Clin. Soc. Trans., Nov. 27, 1891, xxv, p. 78; London Lancet, 1892, ii, p. 25.

Ashhurst: Am. J. M. Sci., 1871, lxii, p. 72; 1873, lxv, p. 135; 1874, lxvii, p. 420; Prin. and Practice of Surgery, 1885, p. 975; Intl. Med. Mag., 1894, iii, p. 735.

Ayres: N. Y. Med. Gaz., February, 1859; Exstrophy of the Bladder, February, 1859 (pamphlet).

Baker: Bost. M. and S. J., December, 1878; N. Y. M. J., December, 1878, p. 575.

Barker: Med. Chir. Trans., 1870, liii, p. 187.

Bassari: Wien. Med. Woch., 1879, No. 33.

Beck, C.: Chi. Med. Recorder, November, 1899.

Bennett: Trans. Acad. M. Ireland and Dub., 1886, iv, p. 39; Dub. J. M. Sci., 1886, p. 461.

Bigelow: Bost. M. & S. J., 1876, i, p. 7.

Billroth: Brit. M. J., 1880, ii, p. 7; Trans. Sydenham Socy., 1881, p. 285.

Bischoff: Baly's translation of Mueller's Physiology, p. 861.

Blassius: Obs. Med. Rariores, 1700, p. 59, Amsterdam.

Boari: Policlinico, Rome, 1896; Am. J. M. Sci., 1896, p. 481; Ann. d. Mal. Org. Gen. Ur., 1896, xv, p. 1.

Bonnett: Phil. Trans. Roy. Soc., Lond., vii, p. 43.

Bovee: Ann. Surgery, January, 1897, p. 70: September, 1897.

Brent: Med. Rec., Sept 10, 1899.

Breschet: Dict. des Sci. Med., 1815.

Bryant: Practice of Surgery, p. 557.

Buck and Coote: Lond. Lancet, Dec. 8. 1860.

Budinger: Arch. f. K. Chir., 1894, Bd. 48.

Cabot: Am. J. M. Sci., 1892, p. 43.

Ceci: La Riforma Medica, Sept. 5, 1887.

Champneys: St. Bart. Hosp. Reports, xiii, p. 88.

Chance: Lond. Lancet, 1852, ii. p. 541.

Chalot: Cbl. f. Chir., 1897.

Chapot: Am. J. M. Sci., 1892, No. 129, p. 43.

Chaput: Ann's Surg., 1894; Arch. Gen. de Med., January. 1894

Chevesse; Lond. Lancet, i, p. 161.

Coates: Edin. Med. and S. J., 1805, i, p. 39.

Cooper, Sir A.: Edin. M. and S. J., 1805, i.

Coulson: Dis. Bladder and Prostate, 1881.

Coote: Lond. Lancet, Dec. 8, 1860.

Curly: Lond. Lancet, 1858, i, p. 627.

Courtade and Guyon: Ann. des Mal des Org. Gen. Ur., 1894. xii, p. 561.

Davenport: Tr. Am. Gyn. Soc., 1890, p. 343.

Dennis's Surgery: P. 533.

Dudley: Am. J. Obs, 1890, xxiii, p. 97.

Duncan: Edin. M. and S. J., 1805.

Earle: Lond. Med. Gaz., 1832, x, p. 8; Lond. M. and S. J., 1832, i, p. 98.

Ellis: Med. Chir. Trans., 1856.

Ericksen: Lond. Med. Gaz.. 1845, p. 380; Surgery, 1857, p. 893.

Eastman: Jour. Am. Med. Association, 1899, xxxiii,, No. 5. p. 263.

Ewald: Wiener Med. Woch., 1897; Alleg. Wien. Med. Zeit., 1898, No. 43, p. 292.

Fenger: Am. T. B., Gen. Ur. Sys., p. 478; Ann's Surgery. September, 1894, p. 257.

Fleury: New Syd. Soc. Bien. Retrospect, 1873, p. 74.

Foulis: Brit. M. J., 1879, ii, 693.

Fowler: Am. J. Med. Sci., March, 1898.

Frank, J.: Chi. Med. Recorder, December, 1899; Jour. Am. Med. Association, July, 1899.

Frank, R.: Wiener Kl. Woch., 1898, No. 43; Wiener Kl. Woch., 1899, No. 3.

Fuller: J. Cut. and Gen. Ur. Dis., 1898, xvi, p. 581.

Futh: Centl. f. Gyn., 1894, No. 14.

Gallet: Ann. d. mal. d. Org. G. U., 1896.

Gay: Bost. Med. and S. J., January, 1886.

Gadow: Phil. Trans., clxxviii, p. 5.

Gersuny: Ann's Surg., December, 1899, p. 716; Wien. Kl. Woch., 1898, No. 43.

Gibb: Lond. Lancet, 1857; Trans. Path. Soc., London, 1857, viii, p. 282.

Gilis: La Semaine Medicale, Feb. 24. 1894, p. 92

Giles: Brit. Foreign and Med. Rev., 1845, xx, p. 511.

Giordano: La Clinica Chir., 1894; Rev. de Chir., 1892.

Glautenay: Chir. d. l'Uretere, 1895.

Glück and Zeller: Arch. f. Kl. Chir., xxvi.

Gould: Illus. Dict. of Med., 1895.

Gray's Anatomy.

Gross: N. Am. M. and Chir. Rev., July, 1859; Lond. Lancet, 1860, ii, p. 564; Med. and Surg. Reporter, 1865, xii, p. 5; Med. and Surg. Reporter, 1869, xx, p. 208; System of Surgery, 1882, p. 668.

Hache: Revue de Chir., 1888, viii, p. 218.

Hamilton: Bost. M and S. J., 1835, xi, p. 93.

Hamilton's T. Book Pathology, ii, Pt. 2, p. 909.

Handyside: Edin. M. and S. J., 1839, iii, p. 422.

Halesz: Anat. Anzeiger, 1894, ix.

Harrison: Med. Press and Circ., April 28, 1897.

Heisler's Embryology.

Heath: Dict. of Practical Surgery, 1886, i, p. 425.

Herczel: Central. f. Harn. u. Sex. Org., 1899, Bd. x, Hft. 11, p. 563.

Holmes: Trans. Path. Soc. Lond., 1863, xviii, p. 176; Trans. Path. Soc. Lond., vi, p. 256; Trans. Path. Soc. Lond., 1865, xvi, p. 169; Trans. Path. Soc. Lond., xv, p. 254; London Lancet, June 27, 1863, i; Holmes' Surgl. Treat. Dis. of Children, 1868, 2d Ed., p. 150.

Hunner: Jour. Am. Med. Association, 1899, xxxiii, No. 25.

Huxham: Phil. Trans. R. Soc. Lond., 1722, vii, p. 42; Phil. Trans. R. Soc. Lond., 1722, vi, p. 671.

International Text-Book of Surgery.

Jackson: Am. J. M. Sci, 1853, i; Bost. M. and S. J., 1866.

Jones: Med. Times and Gaz., 1872, ii, p. 6.

Kalabin: Cent. f. Gyn., 1899, No. 35, p. 1078.

King: Tran. Am. Med. Assn., 1876, xxvi, p. 275.

Keibler: Anat. Anzeiger, 1891, vi.

Koch: Centl. f. Chir., Leipzig, 1897, xxxvi, p. 953.

Krause: Cited by Holmes, Jour. Am. Med. Association, Aug. 26, 1899, p. 529.

Küster: Arch. f. Kl. Chir., 1893, xlii; Cong. d. D. G. f. Chir., 1891.

Kelly: Am. J. Obs., October, 1899.

Kelly's Operative Surgery.

Krynski: Centl. f. Chir., 1896, No. 4, p. 73; Wiener Kl. Woch., 1896.

Lane: Med. P. and Circ., Lond., lxvi, p. 246.

Lichtheim: Arch. f. Kl. Chir., 1872, xv.

Levis: Phil. Med. Times, 1876, vi, p. 322.

Lewin and Goldschmidt: Berl. Kl. Woch., 1893, xxx, p. 776; Virchow's Archiv., 1893, cxxxiv, p. 33.

Lloyd: Lond. Lancet, 1851, ii, p. 370; Lond. Lancet, 1860, p. 564.

LeDentu: Affections Chirurgicales des Reins des Ureters, etc., Paris, 1887.

Lehmann: Cent. f. Bakt., 1890, Bd. 7, p. 457.

Makins: Brit. M. J., 1888; Med. Chir. Trans, 1888, lxxi, p. 191.

Martin and Taylor: An Am. Text-Book Gen. Ur. Dis., etc.

Martin, F. H.: Jour. Am. Med. Association, Jan. 28, 1899; Am. Gyn. Obs. J., June, 1899.

Matas: Jour. Am. Med. Association, 1899, xxxiii, p. 260.

Mathes: Deut. Zeit. f. Chir., 1897, Bd. 45, p. 136.

Mauclaire: Revue de Chir., 1895.

Maury: Am. J. M. Sci., 1871, No. 62, p. 154; Brit. M. J., June 12, 1897, i.

Margarucci: Policlinico, 1894, xv, p. 321.

Maydl: Wiener Med. Woch., 1894, No. 25 and 29; Wiener Med. Woch., 1896, No. 28 and 31; Wiener, Med. Woch., 1899, No. 6, 7 and 8.

Mayo: Provincial M. and S. J., ix.

Minot's Embryology.

Means: Jour. Am. Med. Association, 1899, xxxiii, No. 5, p. 263.

Mazel: Beit z. Kl. Chir., 1899, Bd. 23, 2d Hft., p. 444; Ann's Surg., July, 1899.

McWhinney: Lond. M. Gaz., 1850, p. 360.

Mergh: St. Bart. Hosp. Rep., 1875.

Mikulicz: Ann's Surg., 1897, xxvi, p. 400.

Mercier: Anat et Phy. de la Vessie.

Monari: Beit. z. Kl. Chir., 1896, xv, 720.

Morestin: Mercredi Medicale, Dec. 28, 1892, p. 622.

Mowat: Medical Essays and Observations, pub. by Edin. Soc., 1747, 3d Ed., p. 220.

Mundell: Ann's Surg., December, 1899.

Murray: Brit. M. J., June 12, 1897, i.

Morrow's Gen. Ur. Diseases, i.

Neudörfer: Verhdl. d. D. G. für Chir., 25 Kongress; Fortsch. der Med., 1896, xiv, 225.

Norcross: Lond. Lancet, 1840, ii, p. 110.

Novaro: Cent. f. Chir., 1888.

Nové: Joserand: Rev. Mens. d. Mal. de l'Enf, June, 1899; Phil. Med. J., Dec. 9, 1899, p. 1132.

Oliver: Lond. Lancet, 1863, xi, No. 22.

Pancoast: N. Am. Med. Chir. Rev., 1859, iii, No. 4, p. 710.

Paoli and Busachi: Ann. d. Mal d. Org. Gen. Ur., 1888, p. 553.

Park: Med. News, May 29, 1897, lxx, p. 702.

Parker: Med. T. and Gaz., May, 1881.

Passavant: Arch. f. Kl. Chir., 1887, xxxiv; Arch. f. Kl. Chir., 1890, xl.

Piersol's Histology.

Pawlic: Am. J. Obs., 1890, xxii, p. 1141.

Peterson: Jour. Am. Med. Association, 1900, xxxiv, No. 8, p. 494.

Pettigrew: Phil. Trans., 1866.

Petit: Trait. des Mal. Chir., 1790, iii, p. 4.

Porter: Nashville J. M. and S., viii, p. 381.

Poirier: Ann. d. Mal. d. Org. Gyn. Ur., 1891, p. 745.

Pizani: Cent. f. Chir., 1897, No. 22, p. 631.

Pozzi: Ann. d. Med. d. Org. G. U., 1897, xv, p. 18.

Pousson: An. d. Mal. d. Org. G. U., 1896, p. 103.

Prince: M. and S. J., St. Louis, 1881, xli, p. 492.

Quain's Anatomy.

Ramsey: J. H. H. Bul., November and December, 1896.

Reed, R. H.: Ann's Surgery, Sept. 1892; Jour. Am. Med. Association, 1895, xxv, p. 839.

Reference H. Book of Med. Sciences, p. 33.

Reichert: Mueller's Handbuch der Physiologie, viii, p. 688.

Richard: Gaz. Heb. de M. et Chir., 1854, i, No. 26, p. 416.

Richelot: Union Medicale, 1886, p. 601.

Richardson: Trans. Phil. Soc. Lond., vii.

Richmond: Jour. of Anat., 1884, xix.

Rickerts: Med. Rec., 1894, xv, p. 488.

Robson: Brit. M. J., January, 1885, p. 106.

Robinson: Ann's Surgery, November, 1891.

Rosenberg: Virchow's Archiv, cxxxii, Hft. i.

Rose: D. z. f. Chir., 1877, Bd. ix.

Roux: *Union Medicale*, 1853, i.

Rosegetti: Cent. f. Chir., 1896.

Rokitansky's Path. Anatomy, 218.

Rutkowski: Ann's Surg., 1899, xxx, No. 2. p. 238; Centl: f. Chir., 1899, No. 16, p. 473.

Reichel: A. f. Kl. Chir., 1893, xlvi.

Schatz: Archiv f. Gyn., No. 1.

Schnitzler: Wien. Kl. Woch., 1898, No. 43, p. 991.

Schneider: Siebold's J. f. Geburts., 1832, Bd. xii, p. 279.

Shrady: Med. Rec., 1884, ii, p. 362.

Shimonek: Chic. Clin. Rev., June, 1899.

Simon: Lond. Lancet, 1852, ii, p. 568; Trans. Path. Soc., Lond., 1856, vi, p. 256.

Skene: Dis. of Bladder in Women, 1887.

Smith, A. P.: Tr. M. and Ch. Fac., Maryland, 1878, p. 91.

Smith, Grieg: Brit. M. J., 1880, i, p. 202; Brit. M. J., January, 1890; Lond. Lancet, 1885, ii, p. 8.

Smith, Thos.: St. Bart. Hosp. Rep., 1879, xv, p. 229.

Soden: Edin. M. and S. J., iv, p. 32.

Sonnenberg: Berl. Kl. Woch., 1881, p. 430: Berl. Kl. Woch., 1899, xxxvi, p. 136; Verh. d. D. G. f. Ch., 11 Kon., 1882: Deut Chir., 1890, Lief 52.

Spahn: Tex. Med. Jour., 1895-6, xi, p. 540.

Steiner: Arch. f. Kl. Chir., 1873, xv, p. 369.

Stimson's Manual of Surgery.

Tarver: Med. Rec., 1897, ii, p. 49.

Temain: Gaz. Med. de Paris, 1898, ii, 198.

Thoma's General Pathology, 1896, i.

Tenon: Mem. de l'Acad. des Sciences.

Tillmann's Text-Book of Surgery, iii, p. 283.

Thiersch: Verh. d. D. G. 4 Kon., 1875; Verh. d. D. G., 11 Kon., 1882; Centl. f. Chir., 1876, p. 504

Thomson: Zeit. f. Gyn. u. Geburt, 1893.

Tietze: Beit. z. Kl. Chir., 1897, xviii, p. 1; Annals Surgery, 1897, xxvi, p. 401.

Tizzoni and Poggi: Cent. f. Chir., 1888, No. 50.

Treves' Man. Op. Surgery, 1892, ii.

Trait de Chirurgie.

Trendelenburg: Arch. f. K. Ch., Bd. 43, p. 394; Arch. f. K. Ch., 1887, Bd. 34, p. 620; Centl. f. Chir., 1876, p. 504; Centl. f. Chir., 1885, p. 857.

Trombetta: Cent. f. Chir., 1896.

Tuffier: Gaz. Heb. de M. et Chir., July, 1898; Am. J. Med. Sci., February, 1899, cxvii, p. 229.

Tuffier and Dujarier: Ann's Surgery, March, 1899; Rev. de Chir., April, 1898.

Uyterhoeven: Presse Med. Belg., 1860, No. 29.

VanHook: Jour Am. Med. Association, Dec. 16 and 23, 1893.

Velpeau: Mem. de l'Acad. de Med., T. iii.

Vignoni: Cent. f. Chir., 1896.

Vost: Lancet, 1875, ii, p. 265.

Wakely: Lancet, 1851, i, p. 296.

Waldsham: Practitioner, 1899, lxii, p. 151.

Wendel: Beit z. Kl. Ch., 1898, xxii, Hft. i, 248.

Wheaton: Jour. Am. Med. Association, 1899, xxxiii, No. 5, p. 256.

Wheeler: Med. Press, Lond., 1886, xii, No. 3, p. 384; Med. Press and Circ., 1878, p. 107; Dublin Jour., 1886, p. 461.

Wiedersheim's Comparative Anatomy of Vertebrates.

Willard: Ann's Surgery, April, 1899.

Witzel: Centl f. Chir., 1896, No. 11.

Wood: Med. Chir. Trans., 1869, lii, p. 85; Lancet, 1869, i, p. 259; Lancet, 1874, i, p. 198.

Wölfler: Wiener Kl. Woch, 1896.

Wutz: V. Archiv, 1883, p. 92.

Wyman: Med. Rec., 1885, xviii.

Ziegler's General Pathology, p. 409.

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TYPHOID BACILLI IN THE URINE.

Not a few of the results of investigations that are made in the laboratory and at the bedside are of comparatively trifling value from the point of view of immediate results of a practical nature. From the standpoint of pure science, however, they may be worth much, and indirectly may lead to definite application in the ultimate aim of medicine, the prevention and cure of disease. In truth, much of our knowledge that is applied in the daily routine of medicine and surgery was obtained as the result of research undertaken with no thought or other incentive than the purely scientific one of discovering truth for truth's sake.

In the case of other facts that are announced as the result of scientific research, their applied working value is at once apparent, and they change not only existing theories but practice as well. Thus the discovery that typhoid bacilli are often present in the urine of patients ill with, or convalescing from, typhoid fever will be productive of great results.

The presence of typhoid bacilli in the urine of a patient ill with enteric fever is important, not only to the patient and his friends, but to the entire community in which he lives. It is important to the patient because it may mean a cystitis, a pyelitis, a prolonged convalescence or an imperfect restoration to health. Occurring as it does, in about 25 per cent. of cases, it should be carefully sought for by the physician, and every typhoid urine that is even slightly turbid, or that is voided with evidence of slight pain or local irritation, should be examined for bacilli. But this is not enough, for in many of these cases no evidence of the presence of bacilli is given by turbidity of the urine or disturbed act of micturition. In fact, subjective complaint is the exception. Typhoid cystitis, as shown by Curschmann, is relatively rare. The only safe way, therefore, is to examine the urine of every case, not forgetting that the organisms are often late in making their appearance and are seldom found before the third week. Their early detection and the proper treatment may save the patient from annoyance, and perhaps from something more serious, such as renal or vesical calculi, for the typhoid bacillus may, perhaps, play a rôle here as it does in the production of biliary calculi.

It is important to detect these cases, because of the great danger of spreading the disease by means of careless disposal of contaminated urine. Neufeld[1] has recently presented this aspect of the case with unusual force, and he contends that the danger from infected urine is greater than from feces similarly contaminated. This arises in part because a given quantity of urine will contain as a rule a larger number of typhoid germs than will a similar quantity of feces. In one of Neufeld's cases he estimated the bacilli at one hundred millions per cubic centimeter. But another reason is that an article of clothing, a sheet, a bed-pan, a urinal, the hands or genitalia may be soiled with urine and the accident much more readily escape notice than a similar mishap with fecal matter, thus increasing the danger of spread of the disease to those caring for the patient. From the point of view of public health the danger from improper disposal of typhoid urine is great. Water fouled with fecal matter will give evidence to sight or smell more quickly than if the contaminating substance is the nearly colorless and less malodorous urine. Urine is more apt to be carelessly thrown out than are feces; a patient recovered from typhoid, especially if he be in the country, is more likely to carelessly urinate than to defecate near a spring, well, brook, stream or pond, and thus to infect the drinking water. And the bacilli remain for a much longer time in the bladder and, therefore, in the urine than in the intestine and the feces. In Gwyn's case[2] they were found in urine voided five years after the attack of typhoid. There seems to be a constant inoculation and reinoculation of the urine as it comes from the kidney, by the organisms present in the bladder, so that the culture-medium being constantly supplied, the growth is repeatedly transplanted and is slow to die out. Thus a patient, months or years after his attack of fever, may unwittingly infect a supply of drinking water and start an epidemic of the disease.

In the management of these cases urotropin has been found to be very efficacious. Given in doses of about 30 grains a day, it causes the turbid urine rapidly to become clear and sterile. Occasionally relapses have been noted. If the bacteriuria is due to some other organism than the Eberth bacillus, the effect of the drug is not so certain.

THE TREATMENT OF EPILEPSY WITH OPIUM AND BROMID.

The essential nature and the intimate pathology of epilepsy are as yet not understood, and we are still without a specific or invariably successful method of treatment. In fact, all of the remedial measures at our command can be said to be only palliative, as even when the attacks have remained in abeyance for long periods of time, definite assurances of cure can not be given. In all cases distinct good can be accomplished by a careful regulation of the diet and the mode of life, and among drugs there is none, intelligently used, that seems so efficient as the bromids. The latter, however, by no means always bring about the desired result, and even when they lessen the number and the severity of the attacks, their use is not wholly unattended with unpleasant effects, and their influence may after a time be lost. Inasmuch as physiologic, as well as pathologic, activity, like all other forms of force, is expended along lines of least resistance, one is at times justified in taking radical steps for the purpose of breaking up what may be designated as the convulsive habit.

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[1] Deutsche Med. Woch., Dec. 20, 1900.

[2] Johns Hopkins Hospital Bulletin, June, 1899.

Within recent years a combination of opium and bromid, with various accessories, has been proposed in the treatment of epilepsy, but there has been some want of agreement as to the results obtained therewith. Meyer and Wickel[1] report a small series of cases thus treated, in which the severity of the attacks was mitigated, and both the physical and mental condition was improved. The underlying principle of the plan pursued consists in a gradual increase in the dose of opium, but not beyond 14 grains daily; in careful regulation of the diet; and in applications of cold water. Whether the patient has previously taken bromid or not, the treatment is begun with doses of 3/4 gr. of powdered opium thrice daily. This dose is increased 1/6 gr. on the third day, an additional 1/6 gr. on the fifth, and so on until, on the fifty-first day, the daily dose will be 14 grains. This maximum dose is given for but one day, being replaced on the following days by a mixture of bromids—potassium bromid, 15 gr.; ammonium bromid and sodium bromid, each 7½ grains—in doses of 30 grains thrice daily for two days; then 35 grains for two days, 40 grains for two days, and thereafter 45 grains thrice daily.

From the beginning a dilute solution of hydrochloric acid—1.5 to 200—is given thrice daily after meals in doses of a tablespoonful. In the diet, alcohol, coffee, tea, bouillon, sausage, acids, and strongly spiced articles, mustard, pepper, vinegar, and all spices are forbidden, and salt is restricted to a minimum. Meat is permitted in small amount, and the patient is encouraged to take demulcent soups, eggs, rice, etc., and if constipation be present, fresh vegetables. The diet must be regulated somewhat by the surroundings and the circumstances of the patient. During the first period of bromid administration, cocoa, eggs, and scraped meat, may be added.

From the first day of the period of opium administration a cool bath is taken in the evening before eating, at first at a temperature of 86 degrees for ten minutes, and reducing the temperature 2.25 degrees, and the duration of the bath one minute daily until a temperature of 70 and a duration of three minutes are reached. The baths are thus continued for a week, then, with the same temperature, but for four minutes, for another week; next at the same temperature for five or six minutes. In the first week of the period of bromid administration the bathing is intermitted, then being resumed at 86 for ten minutes and following the course already laid down. Every third day the patient is weighed, and pulse, temperature and respiration carefully observed. The bowels must be kept regular by means of enemata, infusions, abdominal massage, but not purgatives; besides note is taken of the number of attacks and of other details of the patient's condition.

The most important contraindications for the treatment are serious impairment of the nutrition and weakness of the heart. The number of attacks is not diminished during the period of opium administration; it may even be increased. Subsequently, however, the attacks become less frequent, and during the period of bromid administration they cease altogether. The mental state also exhibits distinct improvement. The treatment is to be continued by the administration of large doses of bromid—if possible 2 drams daily—for at least a year, with a tablespoonful of the solution of hydrochloric acid—1.5 to 200—thrice daily, and the same diet as was used during the period of opium administration, avoiding especially alcohol, tea, coffee, spices and meat beyond moderation. A quiet mode of life and avoidance of physical and mental excess, especially excitement, are further conducive to the success of the treatment.

THE EDINBURGH TRADITION AND CLINICAL INSTRUCTION.

In an address entitled "The Edinburgh Tradition and other Topics," Adami[1] emphasizes the great value of bedside teaching, more especially as carried out in the hospitals in Montreal, and he discusses the question why this method has been practiced so long in Montreal, while "elsewhere on the continent until recently clinical instruction and the free entry of students into the wards have been most exceptional?" "The democratic air of the states" is not considered adequate to explain the difference. The fact that many hospitals secondarily became attached to medical schools has been one cause, without doubt, of the opposition to the entrance of students into the wards. In Montreal the founders of the hospital and the earliest members of the staff were likewise the founders of the medical school, and they endeavored to exemplify in the new institutions the traditions of their youth. The Montreal school was developed by men from Edinburgh, and they continued the "Edinburgh tradition," that is, introduced the scheme of teaching in vogue for some time in Edinburgh. The men who founded the Montreal medical institution in 1823, and who became the medical faculty of McGill in 1829, were all Scotch. The Toronto school and the older schools in the United States were founded by English graduates. In London there was no regular instruction in the wards of hospitals until 1808. The Edinburgh school was well developed in 1750, and it was years in advance of London schools in the important matter of bedside instruction.

Adami quotes, from an old volume, notes showing that in 1780 there was in Edinburgh a well-developed system of practical clinical instruction. Gregory, Hume, Duncan, and other Edinburgh teachers, at the beginning of the nineteenth century, taught the men who in Montreal inaugurated a system of ward work that has given the McGill school an important standing on this continent. From this school have come men who have carried this tradition with them to other medical schools. This is an excellent illustration of the great influence that methods of instruction may exercise in the development of institutions. The influence of teachers and of methods of teaching go farther than merely to the present generation of students. As these scatter they are bound to carry with them the traditions and methods of their teachers. Hence the fundamental importance of guiding prospective medical students to those institutions whose methods and standards must be considered the best from the present point of view.

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[1] Berliner Klin. Woch., 1900, No. 48, p. 1085.

[1] Montreal Med. Jour., 1900, xxix, 559-570.

"The democratic air of the States" has something to do with the establishment of proper methods of clinical instruction in our large public hospitals, in so far as the management of these institutions is after all an accurate index, not of any one class a little more intelligent than the rest, but of the main mass of the people. Wherever these institutions are managed according to the expediency of practical politics—and many of them unfortunately are so managed as yet— there the true interests of medical education are sure to suffer in some way or other. But perhaps more harm is done our medical students by the democratic air of the medical colleges themselves, many of which feel free to offer courses in medicine without any facilities whatsoever for adequate clinical instruction, giving no consideration to the lessons taught by the history of medical teaching in this and other countries. A conservative regard for traditions surely would have prevented the starting of medical schools under conditions that prevent them from being such otherwise than in name.

METHODS OF EXAMINATION BY STATE BOARDS AND HOSPITALS.

The various state boards and licensing bodies are entrusted with the important duty of determining to whom shall be granted the right to practice medicine and surgery. For this purpose examinations are held. As far as known all examinations of this kind are written; a series of questions are propounded in the various branches, the applicants write the answers, the papers are corrected and graded by the members of the examining body or their representatives, and if the marks when added reach a certain average, the necessary papers are granted. In practically all states the applicants for license must present evidence of having satisfactorily fulfilled certain requirements and conditions before they are admitted to the examination. In the majority of the states demanding special examination, these requirements include graduation from a medical college, and many states specify the colleges whose diplomas are "recognized" for this purpose. One of the weak points in this machinery is the character of the examination. Written examinations alone do not furnish the requisite basis for determining whether the applicant is a proper person to be given the right to practice even though he holds a diploma from a recognized college. The most that a written examination can do is to show something as to the degree of book-learning possessed by the applicant. No really satisfactory opinion of the practical training and practical knowledge attained by those examined is secured by this method. An applicant may be able to tell all about acute lobar pneumonia without ever having seen or studied a single actual case of the disease. He may describe with great fulness of detail the management of a serious case of labor without ever having seen the inside of a lying-in chamber. He may give the steps in the examination of sputum for tubercle bacilli without the slightest practical experience in clinical microscopic diagnosis. Much of the knowledge that is paraded in the written examinations may be of very recent acquisition, and undoubtedly it often is the result of a hasty process of cramming with the particular end in view of passing the examination.

It may be urged that the holding of a diploma from a recognized medical college guarantees a certain amount of practical fitness to engage in active professional work. Graduation from the better schools probably does. In some of the better schools practical examinations are now in vogue. But what significance in this line is to be given the diplomas of the much larger number of institutions without adequate equipment and with notoriously low standards? In order to remedy this serious defect in the state examinations their scope must be enlarged so as to include practical tests. Patients should be examined, diagnoses made, and treatment prescribed for the concrete actual case by the applicants. Practical laboratory manipulations, such as are used every day by the properly qualified practitioner, should be introduced as part of the examinations for license to practice. This is done in other countries and is done in the examinations for appointment to the medical corps of the U. S. Army and U. S. Marine-Hospital Service. Certainly the hospitals and public medical institutions of every state contain suitable materials for this purpose. And the examining boards surely can command the services of men competent to properly carry out the necessary tests. Examinations of this kind would be actual tests of the qualifications of those that apply for the right to practice. In the framing of new laws and the amendment of existing laws governing admission to practice in the various states this necessary improvement should be incorporated, if not practicable under the old rules, as it is plainly one of the next steps in the evolution of state regulation of medical practice.

The foregoing is applicable with additional force to hospitals that choose internes by competitive examination. Here it concerns not the mere grading of the applicants, but the more difficult problem of determining relative merit. The adequate solution of this problem demands practical examinations; for the competitor who possesses an equal amount of theoretical knowledge but greater practical training than his fellow-contestants is the one most worthy of appointment to the coveted position. In this way only can the best men be selected.

Practical, not theoretical, knowledge should be the qualification required. A man with a little book-learning and a good memory is on top under the present system; the man with brains, and with practical knowledge but without the ability to put it in words, is liable to be at the bottom.

WASHINGTON'S GOVERNOR AND MEDICAL PRACTICE.

The Governor of Washington has vetoed a medical practice act that passed the legislature, because it ruled out the osteopaths. The use of drugs, he claims, is the ruin of the race, and "the osteopaths are perhaps showing us a better way." It is a pity that a man has been elected to such high position, whose mental qualifications are such that he can not see the difference between legitimate medical practice and indiscriminate drugging, and no recourse from the latter but osteopathy or similar forms of quackery. He accuses physicians of "poisoning the springs of life," and calls "the contents of the drugstore perhaps more dangerous to the future well-being of the race than those of the saloon," this last being perhaps a politician's sop to the liquor trade. The spirit, however, of the extracts of the veto message that have been published, is generally that of a sanctimonious quack, who thinks he can libel an honorable class of fellow citizens with impunity from his official position. The members of the profession of the state of Washington should remember this insulting message, and like those of Colorado, previously mentioned in these columns, put an extinguisher upon the future political aspirations of their libeler.

MARK TWAIN AND OSTEOPATHY.

Some time ago the public was edified by the sensible humor and sarcasm of Mark Twain on the subject of "Christian Science." It is too bad that he, like other mortals, has his share of unwisdom, which he exhibits in recent remarks credited to him, endorsing osteopathy in particular and unlimited license in medical practice generally. He has lived so long abroad, it would seem that he is peculiarly jealous of personal liberty in America, a peculiarity often noticed in other individuals from foreign lands. His long residence in Vienna, where he apparently found matters temporarily satisfactory notwithstanding the police and other regulations, has apparently given him an appetite for license that he wants indulged. The state here, he says, stands for liberty, and without full freedom for osteopathy things would be as unsatisfactory as the garden of Eden was to Adam and Eve; people will want what they can not get. The comparison is not such a bad one, and the medical profession will not object if this view of the case, including the consequences, is considered by the legislators before whom he appeared in behalf of the frauds. Mark Twain is clearly a man with a somewhat kinky intellect, but it hardly seems that he will be taken seriously in his argument in behalf of those masseurs who call themselves osteopaths.

CALIFORNIA AND CHRISTIAN SCIENTISTS.

We were aware that the California legislature has had some queer propositions before it in the form of bills, and it therefore does not cause much surprise that it has followed the lead of some other state legislatures in putting "Christian Scientists" on an equality as regards medical practice with other recognized schools of medicine. The chief arguments that affected the intelligent legislators were that these scientists were a numerous and good class of people, which, as the *Sacramento Bee* says editorially, "would have been as pertinent regarding a bill enabling the inmates of the various lunatic asylums of the country to practice medicine." As that paper says, "it is doubtful whether the intelligent legislators who advocated and voted for the bill ever read any of Mrs. Eddy's books, or even know who she is"; and it gives for their benefit a little brief account of the "profitess" and her doctrine, that ought to enlighten them. It would be well if every legislature had near at hand so able and sensible an adviser on medical matters as have the California Solons in the *Sacramento Bee*.

THE DETERMINATION OF SEX.

Some day, perhaps, we may fully understand the mechanism underlying the determination of sex, but at the present time we must acknowledge the existence of certain deficiencies in this respect. Many hypotheses have been proposed, but no one satisfies all of the conditions, although each may contain some element of truth, and be based on the observation of some actual factor. Even apart from this circumstance, however, it seems probable that the process is not a simple one, but is dependent on a complexity of influences, at least some of which have been individually pointed out. On the basis of general knowledge, it seems probable that each parent contributes something in the determination of the sex of the offspring, and it appears likely that the final determining factor must be referred to some peculiarity in nutrition, affecting the spermatozoid, the ovum or the embryo, alone or severally. From this point of view, the hypothesis of Schenk would be most acceptable, though even it must be considered as crude and not sufficiently comprehensive. At a recent meeting of the Obstetrical Society of London, Dr. E. R. Dawson[1] read a paper on "The Essential Factor in the Causation of Sex," in which he took the ground that each ovary normally discharges ova independently of and probably alternately with the other, normal single pregnancy resulting from the fertilization of an ovum from one ovary only by the combined secretion of both testicles, the male parent thus not influencing the sex of the child, which depends rather on the ovary that supplies the ovum fertilized: if the right, a male; if the left, a female. Illustrative cases were cited in support of the view propounded. In the case of plural births, the sex of the children would be the same or different, accordingly as the fertilized ova were derived from one or both ovaries. Apparent exceptions to the rule were ascribed either to the grasping by the tube on one side of the ovary on the other side, or to the transmigration of ova. This hypothesis is not entirely new, nor probably is it correct. It seems most unlikely that the spermatozoid should be wholly without influence in sex determination, and it is scarcely more likely that what might be designated the accident of the situation of the ovary on the right or left side should have any decisive influence in this connection. As a matter of fact, some animals possess but a single ovary.

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[1] British Med. Jour., Dec. 15, 1900, p. 709.

NEW SPECIFIC BLOOD REACTION.

A discovery of some importance from a medicolegal point of view is announced from Germany. Uhlenhuth[1] has found that by repeatedly injecting rabbits with defibrinated blood from various animals, a serum can finally be obtained which gives a specific turbidity with samples of the blood of other individuals of the same species. The blood samples to be tested must be diluted with water, to a pale red color, filtered or cleared by precipitation, and then have an equal amount of 1.6 per cent. solution of common salt added. This last is important, as without it the rabbits' serum gives, with water, a turbidity that might be confusing. Uhlenhuth has tested this reaction with human blood as well as with that of other animals, and in all cases obtained the specific reaction, the rabbits' serum failing to produce turbidity with any sample not taken from the species of animal from which it was inoculated. The test, moreover, is one of exceeding delicacy, the merest traces of blood serving to identify the animal from which they came. A specimen of dried stain on a board from a human being, ox, or horse, four weeks old, was enough when dissolved in salt solution. As regards the nature of the reaction, the author suggests the existence of a specific "coagulin" formed in the body, but whatever further research may prove so far as this is concerned, the importance of the discovery itself is manifest. It is to be hoped that this work will be followed up and confirmed by other workers.

THE YELLOW FEVER GERM.

There appears on another page the substance of the "interim report" of Dr. H. E. Durham and the late Dr. Walter Myers, the British yellow fever commission that has been investigating this disease in South America. Their discovery of a new claimant for the "germship," so to speak, of yellow fever, is an interesting addition to the sum of facts on the disease. The report was prepared before the authors had received any accounts of the later experiments of the American investigators in Cuba, as they remark that the man-to-man transference of yellow fever by a mosquito is hardly intelligible for bacillary disease and that it "does not seem to be borne out by the experiments." The incontestable evidence offered by Drs. Reed,[2] Carroll and Agramonte was evidently unknown to them, and it certainly does not specially favor a bacterial theory of the etiology. The American experimenters offer no positive theory as to the actual germ, however probable it might appear, from their results, that it is a protozoan, but as the case stands the conclusion that yellow fever is not due to such an organism can not be implicitly accepted. Nevertheless, the findings of Durham and Myers are to be taken as part of the sum of facts that is needed before the questions are solved, and they may have important side bearings on their solution. Like the American studies, they have cost a valuable life. Dr. Myers, like Dr. Lazear, is to be enrolled among the physicians who have sacrificed themselves in the search for knowledge that is needed for the good of mankind.

NEW HAMPSHIRE'S VITAL STATISTICS.

The Sixteenth Annual Report of the New Hampshire State Board of Health contains some interesting data regarding causes of death in that state, which are not altogether in accordance with prevailing notions as to the mortality. For example, consumption, which is as a rule considered to stand at the head of fatal diseases, falls from first to second place in 1898 and to fourth in 1899, pneumonia, heart disease, apoplexy and paralysis exceeding it in the number of their victims. Moreover, while it has held first place every other year since that state has had any accurate system of registration, excepting in the year 1892, there has been a steady decrease in its fatality, from 24.18 per 10,000 living population in 1884 to 14.43 in 1899, and its percentage of the total mortality has fallen from 14.01 to 8.26. This decrease also begins to appear from the first and before the microbic origin of the disorder was generally recognized, and therefore can only in part be attributed to special precautions based on that knowledge. The State Board is inclined to credit the decrease of mortality from this disease largely to better sanitation, ventilation, etc., of late years, as well as to the dissemination of information regarding it, in which it has been especially active of late. Pneumonia, on the other hand, is a disorder that has an increasing, as phthisis has a decreasing, mortality, and this is particularly aggravated in certain years by the prevalence of influenza. The average deathrate from pneumonia, between 1884 and 1899 inclusive, is 617, but this has been exceeded every year but two since 1889. The increase in mortality from cardiac and nervous disorders is likewise notable, the number of deaths from the former, prior to 1893, having been between 400 and 500, while since that date between 600 and 700 have been annually recorded. Of nervous diseases collectively, the average mortality for the past sixteen years has been 949, with a gradually increasing proportion, till in 1899 the deaths from these causes reached a total of 1111, the highest ever reported. Cancer statistics, contrary to experience in some other regions, have been remarkably uniform, with an annual average somewhere between 200 and 300. New Hampshire is supposed to be a typical New England commonwealth and, therefore, its statistics are of special interest. It has, however, few large towns, and its population is more largely rural than with its southern neighbors, which fact is to be considered. The decreased mortality from consumption is both welcome and significant, and the increase in that from pneumonia is in accordance with experience in some other sections. While the influenza epidemics of 1890 and 1899 may have had their influence, the increase was, from the figures, already apparent before the earliest of these dates. It seems not altogether unlikely that, with greater care, largely in personal hygiene and general sanitation, the "great white plague" may permanently take a less prominent place in the list of scourges to the human race, but new questions and diseases will then arise, and pneumonia, carcinoma, cardiac and nervous and other disorders appear in our mortality lists with more formidable frequency. Probably the sanitary golden age is still almost as far in the dim future as ever.

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[1] Deutsch Med. Woch., February 7.

[2] Journal A. M. A., February 16.

Medical News.

CALIFORNIA.

Sanitary inspectors are now detailed by the State Board of Health to inspect all incoming trains from the South and East, at Oakland.

Merritt Hospital, Oakland, is to be located on a site—about 5½ acres on Hawthorne Avenue—secured by the trustees of the hospital.

CONNECTICUT.

Yale Medical School, New Haven, has received an anonymous donation of $100,000 which is to be applied to the construction of a clinical building—a laboratory of clinical medicine and surgery.

Dr. William R. Tinker, South Manchester, has been appointed by the coroner of Hartford county, medical examiner for the town of Manchester to fill the vacancy caused by the death of Dr. Julian N. Parker.

The State's death-rate for January was 19 per 1000 per annum. Infectious diseases caused 16.4 per cent. of the deaths, which numbered 1439, or 173 more than the average for the month for the five preceding years.

Incipient tuberculosis is to be treated in a state institution, especially provided, if a bill introduced in the legislature becomes a law. The bill, which has received the unqualified support of the New Haven Medical Society, provides for the establishment of a state hospital in some suitable locality for the treatment of incipient pulmonary tuberculosis, and appropriates $100,000 for the purchase and the erection of buildings.

DISTRICT OF COLUMBIA.

An unlicensed practitioner has been arrested at Washington, while passing under an assumed name, for practicing medicine without a license.

Tributes to deceased members of the Medical Society of the District of Columbia—Drs. Rosier Middleton and William P. Manning—were presented and adopted at a recent meeting of the Society.

Emergency Hospital changes include the appointment of Dr. Clifford Spiro as resident physician, vice Dr. W. R. Moulden; Dr. R. S. Beale, promoted to senior assistant, and Dr. Boyd Dixon, appointed junior assistant, as the result of a competitive examination.

An Examining Board consisting of Col. Alfred A. Woodhull, assistant surgeon general, U. S. A., Major Louis A. Le Garde, surgeon, U. S. A.; Capt. William C. Borden, assistant surgeon, U. S. A., and Capt. Frank R. Keefer, assistant surgeon, U. S. A., designated by the Secretary of War, met at Washington, February 11, to examine candidates for admission to the medical corps of the army. Medical boards have been ordered to convene at San Francisco and Manila, P. I., for a similar purpose.

ILLINOIS.

Dr. William Jayne, Springfield, has been appointed a member of the State Board of Charities, vice R. D. Lawrence, deceased.

Senator Busse has introduced a bill amending the inheritance tax law by providing that when beneficial interest passes to a hospital or other charitable institution, it shall not be subject to tax, but that the exemption shall not apply to institutions operated for profit.

Chicago.

Dr. Frederick C. Schaefer has been appointed gynecologist to St. Elizabeth's Hospital, and surgeon-in-chief to St. Hedwig's Hospital.

Dr. John H. Reeves, who was one of the defendants in the fraudulent insurance case, in which Dr. Michael N. Regent was recently convicted, has turned state's evidence and will testify in the third trial which is now in progress.

The deaths for the week ended March 2 were 434, or 87 fewer than the preceding week, and 103 less than the corresponding week of 1900. As compared with the corresponding period of a year ago, there were 68 fewer deaths from the acute pulmonary diseases and from diphtheria. There were only 9 from diphtheria during the week, as against 32 a year ago. Of these deaths, 165 were due to diseases of the respiratory system.

A coroner's jury has decided, in the case of a decedent who fell, breaking five ribs, and was given treatment by the Dowie method, that if medical aid had been rendered the deceased he would have recovered from his injuries and would certainly have been spared the physical agonies he suffered. It also recommends that a law be enacted which will compel medical examination by licensed physicians in cases of accident or external violence.

The smallpox situation is substantially unchanged; of 21 "suspect" cases reported, 11 were found to be smallpox and were removed to the Isolation Hospital, their premises were quarantined and disinfected, and all persons in the respective neighborhoods were vaccinated. Since the ripening of the vaccin lymph, systematic vaccination of the lodging-house districts has been resumed. At the close of the week there were 35 cases under treatment in the hospital, 9 had been discharged and none died.

February Mortality.—The total deaths for February numbered 1933, giving an annual death-rate of 14.32 per 1000, as against an annual rate of 15.21 per thousand for February, 1897. As compared with the preceding month there were 307 fewer deaths during February, and as compared with the corresponding month of a year ago there were 172 fewer. The reduction was chiefly in the deaths from pneumonia, bronchitis and influenza, there being 184 fewer deaths from pneumonia, 41 less from bronchitis, and 54 less from influenza, a total of 279 from these three diseases. There was also a lesser mortality from cancer, typhoid fever, diphtheria and from violence.

INDIANA.

The Wood medical bill, with an amendment excluding practicing osteopaths who are graduates of regularly constituted osteopathic schools, passed the senate, February 21.

Indiana deaths for January numbered 3400, 602 more than for January, 1900. The tuberculosis mortality increased 23 per cent. over the previous month, and respiratory diseases and measles and puerperal infection were more prevalent.

The Methodist State Hospital, Indianapolis, will be built on Twenty-ninth street, near Illinois, as soon as the executive committee secures subscriptions sufficient to warrant beginning the work. The intention is to begin with a small building and to enlarge as the needs of the institution increase.

IOWA.

Dr. Alpheus A. Deering, Boone, while on a trip in California, fell and broke his leg, February 18, and is now under treatment at Palo Alto.

The Cedar Valley Sanatorium has been established and will soon be opened at Cedar Rapids, under the medical directorship of Dr. George D. Sitzer.

Smallpox in the county jail, Des Moines, has caused the abandonment of the courts and county offices located in the building, and the quarantining of the entire structure.

KENTUCKY.

The Kentucky State Medical Society will hold its forty-sixth annual session in Louisville, May 22, 23 and 24.

Free public baths for Louisville have been reported on favorably by the committee of the board of aldermen and $5000 appropriated for the purpose.

Dr. E. C. Dudley, of Chicago, was the guest of Dr. William H. Wathen, Louisville, February 25, and held a clinic in the hospital of the Kentucky School of Medicine.

The formal opening of the hospital for the medical department of the University of Louisville occurred February 21.

The hospital is already in successful operation, and has accommodation for about fifty patients.

LOUISIANA.

The medical department of the New Orleans University (colored) held its annual commencement, February 26, graduating two.

A quarantine proclamation was formulated by the State Board of Health, February 25, governing all vessels engaged in the fruit-importing trade.

Fifty thousand dollars has been donated the Charity Hospital, New Orleans, by some unknown philanthropist, through Dr. Rudolph Matas. It was given unconditionally, for the purpose of increasing the nursing staff in the hospital and providing a suitable building to be used as a trained nurses' home.

Charity Hospital.—At the annual meeting held February 4 the Charity Hospital, New Orleans, elected the following officers: Dr. Ernest S. Lewis, vice-president; Dr. Jefferson D. Bloom, house surgeon; Dr. Erasmus D. Fenner, first assistant; Dr. James M. Batchelor, second assistant; Dr. Oliver L. Pothier, pathologist, and Dr. Maurice J. B. Couret, assistant pathologist.

Appointments.—The State Board of Health has appointed Dr. Fred Turney, Rigolets Station, and Dr. George H. Douglas, Atchafalaya Station, quarantine physicians, and the following as resident medical inspectors: Dr. J. L. Fridge, Belize, British Honduras; Dr. Augustus Smith, Livingston, Gautemala; Dr. J. S. Allison, Port Cortez, Spanish Honduras; Dr. King Holt, Bluefields, Nicaragua; Dr. Percy Ahrons, La Ceiba, Spanish Honduras; Dr. Allen Jumel, Port Limon, Costa Rica; and Dr. L. A. Wailes, Bocas del Toro, United States of Colombia.

MAINE.

The State Hospital at Augusta, which has a capacity of 500 insane, now has 767 such patients.

Dr. E. H. Wheeler, Camden, has been appointed assistant surgeon in the U. S. Volunteer service, with rank of captain.

Dr. Philip H. S. Vaughan, Augusta, has been selected as assistant superintendent of the Eastern Maine Insane Hospital at Bangor.

The State Medical Association, on account of the conflict of dates with the meeting of the AMERICAN MEDICAL ASSOCIATION, has changed the time for its annual session to June 12-14.

MICHIGAN.

Deaths in Michigan, for February, numbered 3173 or 498 more than for the preceding month. The increase is assigned to the prevalence of pneumonia and influenza.

The Semicentennial of the medical department of the state university was celebrated February 22. Dr. William F. Breakey, Ann Arbor, spoke on "Medical Education in the Early Fifties," and Dr. Victor C. Vaughan, dean, considered the ideals of the medical department.

Smallpox Infected Mail.—The State Board of Health has received a report from a health officer giving an instance where smallpox was apparently contracted by the handling of infected mail. There is but one case of the disease in that city, and that person has not been away from the city; he has been distributing mail, and the health officer suggests that as the mail carriers, when sorting mail, moisten their thumbs in their months, the only probable source of the disease is some infected letter handled in that manner.

MINNESOTA.

Bethesda Hospital, St. Paul, reports receipts of $132,291 for the nine years of its existence, and $79,944 disbursements. The buildings are valued at $56,990.

Dr. Samuel Friedlander, Minneapolis, who sued for $5050 for false arrest, and damage to his reputation as a physician and citizen thereby, was awarded $175 damages, February 20.

MISSOURI.

Dr. Thompson E. Potter, St. Joseph, was seriously injured in a runaway accident, February 24.

Dr. E. Victor Wedding, Kansas City, who was sued by a patient, for $2000 for alleged malpractice, had a verdict rendered in his favor, February 14.

Dr. Robert L. Evans, Boonville, has been made a member of the Cooper County court, under the provision of the new law which makes the county court ex-officio members of the State Board of Health.

NEW JERSEY.

Vaccination is progressing rapidly at Woodbury; the two cases of smallpox are doing well, and the health board does not anticipate any further spread of the disease.

Muhlenberg Hospital, Plainfield, has been given a site for its new building, with 500 feet frontage and a depth of 300 feet, by James A. Martine. The land is valued at $10,000.

Friction between the house staff and the superintendent of the Orange Memorial Hospital has culminated in the resignation of Drs. Frank H. Glazebrook and Henry P. Merrill, February 25.

Christ Hospital, Jersey City, in its twenty-seventh annual report shows that 4633 patients were cared for, 1171 of whom were bed patients in the hospital. The mortgage debt was reduced $3000 during the year.

NEW YORK.

Subscriptions to the Ogdensburg City Hospital annex already amount to $15,500.

The Craig Colony for epileptics now has 620 patients, and with the completion of the four new buildings now under construction, 120 more can be received.

Buffalo.

Dr. Matthew D. Mann has been elected park commissioner.

Dr. W. Scott Renner sailed for Europe March 6, to spend two months in Berlin and Vienna.

Dr. P. W. Van Peyma has been elected chairman of the board of school examiners for the year 1901.

The Emergency Hospital, which is supported by the Sisters of Charity, will soon remove into its new building.

Dr. John Farr, formerly of Buffalo, has been appointed an assistant surgeon in the army. Dr. Farr was for some time house surgeon at the Fitch Accident Hospital.

New York City.

The Post-Graduate Medical School and Hospital has received an anonymous gift of $15,000, to endow three beds in the children's ward.

The nurse in Bellevue Hospital who was charged with manslaughter, in having caused the death of one of the insane patients, has been acquitted.

Early in March, the first number of a scientific quarterly, under the title *New York University Bulletin of the Medical Sciences*, edited under the auspices of the New York University Medical Society, will be published.

Appointment.—The governor has appointed Dr. Daniel Lewis, former member of the State Board of Health, state health commissioner under the new law. He will have jurisdiction over the matters formerly coming under the notice of the state board. The salary is $3500 a year, and his term expires Dec. 31, 1904.

New Periodical.—The annual circular of the New York University is to be converted into a periodical, each number of which will contain, besides the circular matter, statements of recent progress in the university. This bulletin will be issued twice a month, except from August to December.

Smallpox.—New Cases of smallpox continue to be recorded. A public school teacher in Manhattan has just been reported with the disease, and two centers of smallpox have been unearthed by the health officials in Brooklyn. Eight cases were discovered in a row of tenements in Warren Street, and eleven smallpox patients were found in a four-story double apartment house in Driggs Avenue.

Hemophilia.—Elmer W. Roach, of Brooklyn, a student of dentistry, has died after three weeks of almost continuous bleeding from the nose and gums. This case of hemophilia is of special interest because Mr. Roach had reached the age of 22 years, and because about nine years ago he lost a leg in a railroad accident. If he had been a "bleeder" at that time he could not have survived the injury.

OHIO.

The estate of the late Dr. Alexander Neil, Columbus, valued at $150,000 is to be distributed equally among his three daughters.

Dr. John L. Boylan, Milford Center, fell from the roof of his barn, February 22, breaking two ribs and receiving other injuries.

Dr. Robert C. M. Lewis, Marion, formerly surgeon for the T. and O. C. R. R., has been appointed surgeon for the C., S. and H. R. R.

The vacancies on the medical staff of the National Military Home, occasioned by the resignations of Drs. Beal and Miller, have been filled by promoting Dr. Edward S. Breese to be first assistant surgeon; Dr. George H. Kress, second assistant; Frank W. Roush, third assistant, and A. L. Light, fourth assistant.

PENNSYLVANIA.

A conference has been held for the purpose of making a new annex to the Allegheny City Home for the Insane at Claremont. The new annex will cost about $120,000.

The pathologist to the Hospital for the Insane, at Norristown, will be compelled, hereafter, to examine the cattle at that institution in order to prevent tuberculosis, as certificates given by drovers are unreliable.

Drunkards Insane.—A resolution has been introduced in the house of representatives providing that persons of aggravated intemperate habits, be placed in an insane asylum until they are cured, and that they be recommitted in case of recurrence.

Philadelphia.

Dr. S. Weir Mitchell will leave for Vancouver, about March 15, and later go to Japan, returning in June.

Dr. Francis R. Packard has assumed the editorship of the *American Journal of the Medical Sciences*, to succeed Dr. Alfred Stengel, resigned.

The coroner's jury a few days ago recommended that the licenses of two women physicians be revoked, because they were conducting private maternity hospitals at their respective homes.

President Shoemaker, of the Pennsylvania Hospital, has appointed Messrs. John B. Garrett, and John Story Jenks, Dr. John B. Chapin, and Dr. Thomas G. Morton, a committee to make arrangements for the 150th anniversary of that hospital, to be held early in June.

GENERAL.

Honolulu's Board of Health has directed the attorney general to draft a bill, for presentation to the next legislature, prohibiting the landing of any persons suffering from any contagious and infectious disease. The bill is aimed especially at lepers and consumptives.

Congress of Nurses.—The International Congress of Nurses is to be held in Buffalo next September, for the purpose of strengthening the national and international organizations which the nurses of this country, Great Britain, the British colonies, Denmark, and Holland have been developing during the last few years. The nurses' national organizations in all these countries are pledged to work steadily for the advancement of educational standards and ethical development, and those of English-speaking countries also have in view the attainment of state examinations and registration. The organization in the United States is affiliated with the National Council of Women, and within the last year an international council of nurses has been organized, and will hereafter hold quinquennial meetings with those of the International Council of Women. The chairman of the congress is Miss Isabelle McIsaac, of the Illinois Training School for Nurses, Chicago, and the secretary, Miss Banfield, of the Polyclinic Hospital, Philadelphia.

California Plague Investigation Ended.

(Special Telegram from Our Own Correspondent.)

San Francisco, Cal., March 7 ,1901.—The Federal Commission, which, as recently noticed in The Journal columns, has been making an investigation of the plague conditions in San Francisco, has completed its work and its members left for the East on March 5. Inoculation experiments have been performed in all of the following cases and showed the positive presence of plague in every instance, these cases having occurred in San Francisco during the investigation of the Commission. In brief, these cases, which bring the number previously reported in The Journal to thirty-two, are as follows:

Case 26.—Chun Ah Chon, a male actor, 44 years old, born in China, died February 5, at the Chinese theater on Washington street.

Case 27.—Lum Hong Yuen, a male laborer, aged 37 years, born in China, died at his residence, 28 Ross alley, February 6.

Case 28.—Wong Chi Lin, a male, aged 50 years, a cigarmaker, born in China, and residing at 15 Waverly Place, died February 7.

Case 29.—Tom Shom, a male actor, aged 51 years, died at his residence, 814 Washington street, February 10. This case was under observation by the commission for three or four days before his death.

Case 30.—Ny Ah Bock, a male, 45 years old, died February 11, in St. Louis Alley. This case was attended by Dr. Mather, of San Francisco, and by him reported as suspicious. Glandular enlargement was found in the neck in this instance, and at the autopsy, which was performed by Prof. Simon Flexner, of the commission, the spleen was found very much enlarged, septic, the lymph glands of the neck much enlarged, hemorrhagic, and necrotic. Plague bacilli were found in enormous numbers in both the spleen and glands.

Case 31.—The details of this case are not yet completed.

Case 32.—Fong Lung Why, a male cook, 33 years old, was born in China. He died at his residence, 13 Waverly place. This man came from Sacramento about two weeks before death, and was sick when he arrived. There was no enlargement of the superficial lymph glands, but the spleen was much enlarged, septic, and contained enormous numbers of plague bacilli. The organism was obtained in pure culture from the spleen.

CANADA.

The Montreal Medical Society, consisting of French members, discussed and considered at the last meeting, the question of a new civic hospital for Montreal. The society favors a single hospital under the direct management of the city.

Dr. M. S. Frazer, of Brandon, Manitoba, one of the delegates to the tuberculosis conference recently held in Ottawa, and connected with the Indian department, as the medical superintendent of the Brandon Industrial School, will make a report on tuberculosis as it affects the Indians, so that the department may take any steps necessary to prevent this disease.

Ontario's Smallpox.—The situation in the province as regards the spread of smallpox is a trifle alarming. There are 3 cases in Toronto, all progressing favorably, and 83 in the province. In the County of Algoma there are 57; Carleton and Norfolk, 1 each; Middlesex, 2; York, Simcoe and Muskoka, each 3; Renfrew, 11; Haldimand, 1. The provincial board of health has organized a smallpox camp at Sudbury, where there are said to be 17 cases.

Sherbrooke Medical Society.—At the annual meeting held last week, Dr. J. F. J. Austin was elected president and Dr. J. O. Camirand, secretary-treasurer. The "lodge-doctor" was the principal topic of discussion and the Society decided to adhere to its previous decision, each member pledging himself to accept no position from any society as lodge physician. Another question was the relation of the doctors and druggists in the matter of counter prescribing, and it was decided to hold a conference in the near future, with the druggists of the city, to discuss the matter.

Injured in Chemical Laboratory.—An unfortunate accident occurred in the laboratory of Professor Ruttan, of McGill's faculty of medicine, recently, and will probably result in the partial blindness of a first-year medical student. The accident occurred through the unexpected explosion of a quantity of sulphuric acid and alcohol with which the students were experimenting. The test-tube of a neighboring student was submitted to Shaw's nose for his opinion as to the nature of the gas being given off, when it frothed up in his face, terribly burning it and also permanently injuring the right eye.

Indian Girls as Nurses.—The department of Indian affairs is considering the advisability of training girls at the industrial school at Brandon, Manitoba, in general nursing. This has been recommended by Dr. Fraser, who has the medical supervision of the institution. The value of having Indian female nurses in the Northwest can not be doubted, as the doctors are in many instances some distance from the Indian reserves, and it is also thought that the training of these girls would be in this way an education in the matter of preventing the spread of consumption amongst the Indians. Trained nurses will be brought to Brandon to train and instruct the female pupils in this work.

FOREIGN.

The hospital connected with the Tokyo University, Japan, according to mail advices just received, was burned January 29. Twenty-one patients were burned to death and ten patients and eleven nurses and attendants injured.

Smallpox in Dawson has abated, according to word from Port Townsend, Wash., bearing date of February 26. Public vaccinators are making a house-to-house visitation, accompanied by a squad of policemen.

The death of Prof. H. Schapiro, of St. Petersburg, is announced. He was the author of works on internal medicine. Prof. A. Rocha, editor of the *Coimbra Medica*, also died recently, and Mexico has lost a prominent member of the profession in the death of Prof. Alfonso Herrera.

Antituberculosis dispensaries are to be established in Paris, by a benevolent society. They are to be for the treatment of tuberculosis alone, and medicine, food and garments distributed gratuitously. The society will also supervise the patient at his home, to render the conditions as favorable as possible for recovery.

The Progress of the Plague.—On February 27, 7 new cases of plague were reported in Cape Town, South Africa, 2 being Europeans. The plague returns give 3396 deaths as the total for all India for the last week in January, with 3277 for the preceding week. In Bengal, where the greatest number of cases and deaths occurred, there were 2261 deaths, and in Bombay City 427 deaths during the last week in January, with 308 the previous week. In that city the epidemic increased markedly, with a report of 922 deaths for the second week in February. In Mauritius, the week ending February 14, 14 new cases of plague were reported with 10 deaths. In England, according to the *British Medical Journal*, the London County Council has authorized its Public Health Committee to spend £50,000 if necessary, in dealing with suspect and contact cases of plague. London has been divided into four districts for the purpose of isolation, and thorough accommodation for contacts and suspects will be provided in each district. Arrangements have been made for providing, in a few hours, for the accommodation of 200 persons at a time, at a cost of £16,000, and 600 more can be provided for within a few weeks should it be necessary. While these buildings are not to be commenced unless plague actually appears in London, £7000 is to be spent on the drainage, water-supply and preparation for the foundations for these temporary buildings.

Correspondence.

The Modern Methods of Quarantine.

St. Paul, Minn., Feb. 18, 1901.

To the Editor:—In the *N. Y. Medical Journal* of Nov. 3, 1900, Dr. A. H. Doty discusses this subject as bearing upon marine sanitation. It is true, as he states, that in the past there has been much unwarranted fussiness in the administration of marine quarantine. Methods have been in vogue that caused much delay in the discharge of passengers, mails and cargo, that were in no way based upon scientific teaching, and that were largely in demand chiefly for the benefit of the port sanitary officials.

Had Dr. Doty confined his arguments to marine sanitary methods deserving of criticism, his field would have been sufficiently wide. But there are many statements in his paper which have no bearing upon the disinfection of a cargo of iron in the hold of a vessel, or of rags that supposedly have been steamed and baled under pressure in a foreign country, or of passengers lined up on the deck, or of mails lying in an open boat. For example, the following statement appears: "Contrary to popular belief the most careful investigation, both from a scientific and a practical standpoint, has demonstrated that the clothing actually worn by well persons is not a medium of infection." There are few modern sanitarians who will accept this view. Few, I think, will admit that the well can not carry in their clothing the infection of scarlet fever or of smallpox directly deposited or transmitted through the atmosphere, from a patient in the stage of desquamation. Clothing soiled with the infectious discharge from a patient ill with typhoid fever, tuberculosis, or diphtheria can certainly convey infecton to others.

The following are a few illustrations of this fact: My father, a physician, was attending scarlet fever patients. He tried to prevent conveying the disease to his own family of small children, by carefully removing the suit worn while visiting such patients before returning to his home. In spite of these precautions, however, he undoubtedly did convey the disease to his own children, one of whom died in consequence.

A few years ago, while in attendance upon scarlet fever patients, I was careful so far as my clients were concerned, but somewhat careless in my methods as related to my return home, and my wife contracted the disease, beyond doubt through my carelessness. Dr. Montizambert, Director General of Public Health in Canada, in reporting on a recent outbreak of smallpox in Winnipeg (1900), says: "Careful and continual injury lead to the conclusion that he must have contracted the disease from the unpacking of infected clothing during his voyage from Hongkong." 'Quite recently infection of a family in Minnesota, with smallpox, was traceable to the visit of the father to one of his rented houses, in which there had been cases of smallpox a short time previously. His clothing must have conveyed the disease for he himself was not ill. Recently a woman whose child had died of diphtheria borrowed mourning goods of a neighbor. Diphtheria, soon after this borrowing, appeared in the family of the lender, undoubtedly due to infection, through the medium of the loaned clothing.

I mention these cases as a few that have come under my own observation. Dr. Doty admits that it is "within the bounds of possibility" for such cases to occur exceptionally. I venture to say that instead of being exceptions they are of daily occurrence, but unreported. The casual investigator will often fail to discover the source of infection in an outbreak of scarlet fever, smallpox or diphtheria, when the careful observer will find the fault to rest upon some healthy individual as the transmitter of the dissease. Dr. Doty further states: "The busy medical practitioner may during the day visit many cases of infectious disease and may go from them to others without previously changing his clothing or performing disinfection. He has reason to believe that he does not act as a medium of infection; as he sees no evidence of it in his own home, nor is evidence presented to him that he transmits disease to his patients." That the busy practitioner may do as thus stated is too true. Surgeons hesitate to go from a patient having an infectious disease to any operative work. Why should they hesitate if there is no danger of their conveying infection. I contend that every physician in attendance on certain infectious diseases, such as scarlet fever, smallpox, diphtheria, etc., should wear a protective gown, and this should be moist with an antiseptic solution at the time it is worn, or should be disinfected as soon as possible after such a visit. Dr. Doty, after expressing himself as to the absence of danger from the clothing of non-infected persons, says: "in municipal sanitary work this knowledge is valuable as we are then reasonably assured that the disease will not spread—at least to any serious extent—through the medium of clothing worn by well persons." Truly, this is a remarkable position to be taken by a sanitarian at this date. Were it true it would mean that the quarantine of the homes of those ill with smallpox and scarlet fever is unnecessary; that so long as the actual patient is kept at home no danger can follow the promiscuous mixing of other members of the family with the public at large. If his statement is true it means that the exclusion of healthy children, resident in an infected house, from school is a mistake. It may be true that there may be the attendance at school of many children from infected homes without the appearance of many cases of disease due to such exposure, but this does not prove the nonexistence of danger from such a course. One has but to study the rise in numbers of infectious diseases following the general opening of schools in the fall to realize that the association of children has much to do with the spread of infectious diseases, and that this increase in disease is dependent on the intermediate as well as the mediate infectious children. Dr. Doty, in support of his opinion, says: "As a matter of fact, many careful observers believe that the activity, at least of some, of the specific organisms is inhibited by an exposure of only a few minutes to air and sunlight." This proves nothing. Admitting some of his statements to be true, the argument does not apply to clothing, much of which gets little sunlight or air, even when in use.

It may be well to touch upon two other statements in Dr. Doty's paper: 1. "As far as I am able to ascertain no authentic report exists which shows that cargoes of vessels have transmitted bubonic plague through the medium of infected rats or other sources." This, it is not necessary for me to argue on further than to say that even should the statement be true, it does not prove that "rats or other sources" might not have transmitted the disease. He further states: "rats collected at New York from coffee-carrying vessels from Rio Janeiro and Santos, during the recent outbreak of plague in these two places were examined bacteriologically and in no instance was there the slightest evidence of bubonic plague." What, may I ask, does the Doctor expect to prove by this statement? To me it represents but a fortunate circumstance, for no one questions, I presume, that rats may be infected with the plague bacillus, nor would any one question the fact that had any of the rats on any of the ships examined been infected, a careful bacteriologic examination of such rats should have demonstrated the fact. 2. He also says: "Most careful investigation has failed to present satisfactory evidence that either foreign or domestic rags act as a medium of infection (for anthrax) although they include all kinds of wearing apparel, which is frequently filthy and offensive." Yet the Doctor must admit that anthrax has been brought into this country through infected media in ships' cargoes; and if capable of transmission in such media, why is it not possible that rags should be a means of transmission if infected?

I think any one who has traveled extensively by water can realize that there is much absurd maratime inspection, but that does not prove that infectious diseases can not be transmitted by cargo, passengers or clothing; or, in other words, that infected human beings are the only means of transmission for infectious diseases.

In conclusion, I can not agree with Dr. Doty either in the premises or conclusions presented in his article, and I think my position in this respect will be borne out by sanitarians and bacteriologists in general.

H. M. Bracken, M.D.

Fatality of the Rattlesnake.

Knoxville, Tenn., Feb. 26, 1901.

To the Editor:—Your editorial on the "Fatality of the Rattlesnake" induces me to say a word on the subject. The professor referred to therein is manifestly not posted on rattlesnakes. During the past eight years I have had occasion to spend a considerable portion of six winters in Southern Florida. The diamond rattler is a denizen of that region, and since I made my first visit there eight years ago, I know of three men, a horse, and a number of dogs dying from rattlesnake bites. The diamond rattler is said to be the most poisonous of all, and attains an enormous size; fortunately he is usually peacibly inclined, and all he asks is to be let alone.

On one of my visits there I talked with an Indian on the subject, and asked him how he cured rattlesnake bites. He very promptly answered: "Don't cure him. Big sleep. Big sleep." So, not only the Indians of that section, but the whites also consider a man as good as dead when a diamond rattler strikes him.

C. Deaderick, M.D.

Association News.

New Members.

The following is a list of new members of the A. M. A. for February, 1901:

ALABAMA.

Kilflebrew, J. Buckner, Mobile.

ARKANSAS.

Christian, R. B., Little Rock.

CALIFORNIA.

Barbat, Wm. F., San Francisco.

CONNECTICUT.

Bell, Newton S., Windsor.

FLORIDA.

Pierce, Claude C., Key West.

ILLINOIS.

Lockhart, Charles H., Witt.
Davis, John A., Farmer City.
Scott, R. G., Geneva.
Bench, Edward M., Galena.
Fisher, Frank B., Springfield.
Plummer, Amzi S., Peoria.
Bishop, Arthur M., Chicago.
Giles, Henry Wiley, Wataga.
Ballard, C. N., Chicago.
Lyons, John A., Chicago.
Montgomery, Frank H., Chicago.

INDIAN TERRITORY.

Donohue, Philip, Afton.

INDIANA.

O'Day, John C., Montpelier.
Allen, Horace R., Indianapolis.

IOWA.

Neill, Hiram, Sibley.
Ratcliffe, J. J., Waukon.
Struble, Andrew, Inwood.
Evans, M. M., Le Grand.

KENTUCKY.

Schultz, Wm. F., Covington.
Dickinson, Jos. S., Trenton.
Forsythe, M. L., Harrodsburg.
Meredith, T. O., Burgin.

LOUISIANA.

Powlett, Stephen L., Hammond.

MARYLAND.

Morrison, Wm. Baker, Hagerstown.
Pitsnogle, J. E., Hagerstown.
Penrose, Clement A., Baltimore.

MASSACHUSETTS.

Pierce, A. Martin, New Bedford.
Miller, Jarred H., Wollaston.
Crowell, Samuel, *Boston*.

MICHIGAN.

Burnham, Wm. A., Hancock.
Gammon, H. B., Hastings.
Campbell, Alexander Mackenzie, Grand Rapids.
Long, C. M., Escanaba.

MINNESOTA.

Palmer, Walter A., Redwood Falls.
Hirschfield, Adolph, Minneapolis.
Nippert
De Jon
Cutts,
Hunt,
Murphy, Wm. B., Minneapolis.

MISSOURI.

Witherspoon, T. C., St. Louis.
Ketcham, C. M., Carthage.
Robinson, G. W., Joplin.
Wallace, Charles H., St. Joseph.
Burke, Foster W., Laclede.

MISSISSIPPI.

Bridges, Robert Richard, Bridgeville.
Ward, B. F., Winona.

NEBRASKA.

Fochtman, John H., Cozad.

NEW HAMPSHIRE.

Wheat, A. F., Manchester.

NEW JERSEY.

Weeks, David F., Trenton.
Bennett, J. K., Gloucester City.

NEW YORK.

Bemis, Morris N., Jamestown.
Douglas, W. E., Middletown.
Evans, Wm., Westtown.
Myers, Frank D., Slate Hill.
McPhail, Donald T., Purdy Station.
Smith, Harrie Eugene, Mt. Vernon.
Bullard, W. Duff, New York City.
Manning, F. O., New York City.
Hubbell, Marvin D., New York City.
Neuhaus, G. E., New York City.
Farrington, Jos. Oakley, New York City.
Herter, Christian A., New York City.
Ferguson, James A., New York City.

NORTH DAKOTA.

Hood, Charles E., Drayton.

OHIO.

Koehler, James A., Shelby.

PENNSYLVANIA.

Tappan, L. N., Philadelphia.
Deaver, Richard W., Philadel*phia*.
Everitt, Ella B., Philadelphia.
Middleton, Wm. J., Steelton.
Blanchard, Geo. A., Scranton.
Gibson, Maris, Wilkes Barre.
Shively, J. B., Shippensburg.
Shoemaker, Levi I., Wilkes Barre.
Gross, H. F., York.
Boyle, Julius J., Susquehanna.

SOUTH DAKOTA.

Butler, Clarence A., Dell Rapids.

TENNESSEE.

Mitchell, R. H., Memphis.
Cherry, E. Otis, Newbern.
Crofford, T. J., Memphis.

TEXAS.

Florer, T. W., Waxahachie.
Horsley, John S., El Paso.

VIRGINIA.

Culpepper, Vernon G., Portsmouth.
McGuire, Stuart, Richmond.

WISCONSIN.

Winslow, Rush, Appleton.
Noyes, Geo. Kasson, Milwaukee.
Gilberson, Peter C., Mt. Horeb.

St. Paul as a Place of Meeting.

Many of the members of the American Medical Association remember with pleasure their last meeting in St. Paul. It was June, 1882, nearly twenty years ago, the month being one of the most beautiful in the year in Minnesota. Some of the members have passed away since then, and younger men have taken their places, but those still living, who were in St. Paul then, speak with enthusiasm of the saintly city, its beauty, pleasant environments and the cordial hospitality that made the meeting of 1882 so memorable a one. This year the Association will find many changes, and the physicians and their wives who were there then and who have not visited St. Paul in the interim will have some difficulty in recognizing it. For in nineteen years St. Paul has grown from a town to a city; a city of broad asphalted streets, with electric cars running in every direction, fine public buildings, good hotels, beautiful churches, theaters, pretty parks in the city, and Como Park outside. There are four well-equipped hospitals, which the citizens justly claim are not equalled in any city of the size in the country. Then there is picturesque, historic Fort Snelling, only a few minutes drive or street-car ride from the city; Hamline University, the St. Paul Seminary and the Agricultural College, all institutions in near suburbs and all worth a visit by the tourist. Minneapolis, which contains much of interest, is connected with St. Paul by two electric lines. St. Paul, situated as it is on the high ground on the left bank of the Mississippi, has so many natural advantages that it has not been difficult to make it one of the most beautiful cities of the West. The old union depot has been enlarged as the city has grown, and near it runs a car line from which the strangers can transfer to all the other lines running through town and out into the suburbs. The electric-car system in the twin cities is in every way abreast of the times. The Association is fortunate in the time of the meeting, June, as Minnesota weather is then "showing off." The city will be looking its prettiest, as it is just after the "spring cleaning," and before the hot sun of midsummer has had a chance to blister the fresh green leaves. The season is also just beginning at near-by lakes, of which there are so many. The sunny skies of Minnesota have been compared to those of Italy, and the combination of cool air and the warm June sun make this particular season of the year the most desirable one for out-of-town visitors.

Married.

Horatio B. Withers, M.D., to Miss Mary L. Wester, both of Mineral Wells, Texas, February 12.

Harry P. Findley, M.D., Massillon, Ohio, to Miss May Quinby, of Monmouth, Ill., February 14.

Daniel G. R. LeQuesne, M.D., Cleveland, Ohio, to Mrs. Mary R. French, of The Dalles, Ore., at Toledo, Ohio, February 25.

Deaths and Obituaries.

Abbott Hodgman, M.D., New York University, 1858, died at his home in New York City, February 27, aged 68 years. He served on the staff of Blackwell's Island Hospital, N. Y., having medical charge of the local prison for eight years. In 1884 he was a member of the commission appointed to investigate tenement conditions. He was a member of the American Medical Association and a trustee of both the Metropolitan Museum of Art and the New York Savings Bank.

Samuel Camp, M.D., New York University, 1851, of Great Barrington, Mass., died February 29, aged 72. He began practice in New Marlborough, Mass., and four years later went to Michigan, returning to Great Barrington in 1859. He was surgeon of the Twenty-seventh Massachusetts infantry during the Civil War.

Seneca T. Hyde, M.D., University of Vermont, Burlington, 1866, a successful practitioner of Neponset, and a member of the Norfolk District and Massachusetts Medical Societies, died at Hamilton, Bermuda, where he had gone for his health, February 17, aged 65.

John H. Renner, M.D., Northwestern University Medical School, Chicago, 1864, died at his home in Lagro, Ind., from Bright's disease, February 21, aged 70. He was a member of the American Medical Association.

William B. Thomason, M.D., University of Georgia, Augusta, 1854, who had practiced in Bullock County for nearly half a century, died at his home in Louisville, Ala., February 2, aged 74.

Thomas O'Reilly, M.D., Royal College of Surgeons, England, 1849, died February 24, at his home in St. Louis, Mo., where he had practiced for more than fifty years, aged 74. He was a member of the British Medical Association.

William F. Aiken, M.D., Harvard Medical School of Boston, 1886, killed his wife and himself February 27, at his residence in Savannah, Ga. He was 35 years of age and had been mentally unbalanced for several years.

Matthew C. Martin, M.D., Milwaukee Medical College, 1899, died at the Milwaukee County Hospital, of which he was assistant resident physician, February 21, from typhoid fever, aged 25.

William Glenn, M.D., University of Minnesota, 1893, and professor of physical diagnosis at Hamline University, died from pneumonia, at his home in Minneapolis, February 20, aged 41.

Dewees Cunningham, M.D., Medical College of Ohio, Cincinnati, 1871, an esteemed practitioner of Wurtemburg, Pa., died from heart disease at his home in that place, February 19, aged 59.

William F. Frost, M.D., Rush Medical College, Chicago, 1896, died at the residence of Dr. Harry R. Desmond, Plattsburg, Mo., February 18, from pulmonary tuberculosis, aged 27.

Edwin A. Fessenden, M.D., Bellevue Hospital Medical College, New York, 1889, died on February 28, at Portland, Me., from poisoning by carbolic acid accidentally taken, aged 55.

Horatio N. Bradshaw, M.D., Rush Medical College, Chicago, 1867, died at his home in Superior, Neb., February 22, after an illness of three weeks.

Street Jones, M.D., Bellevue Hospital Medical College, New York, died from pneumonia, at his home in Goldsboro, N. C., February 20, aged 27.

Littleton F. Brittingham, M.D., Missouri Medical College, St. Louis, 1847, died suddenly at his home, Hannibal, Mo., February 24, aged 80.

Warden James Byers, M.D., College of Physicians and Surgeons, New York, 1889, died at his home in Brooklyn, N. Y., February 22, aged 38.

John W. Elliott, M.D., University of Louisville, Ky., 1883, of Lake City, Miss., died after a long illness at Yazoo City, Miss., February 14.

B. F. Longstreet, M.D., Jefferson Medical College, died at his home, Mount Auburn, Cincinnati, Ohio, February 21, from la grippe, aged 52.

Stephen J. Clark, M.D., University of New York, 1861, for many years a practitioner in New York City, died in Sing Sing, N. Y., February 24.

J. J. Bozeman, M.D., Medical College of the State of South Carolina, Charleston, 1857, died at his home in Ninety-Six, S.C., February 19.

E. F. Tidwell, M.D., Louisville Medical College, 1882, a practitioner of Lester, Ark., was found dead at Camden, Ark., February 25.

Samuel B. Park, M.D., Beaumont Hospital Medical College, St. Louis, 1888, died at his home in Winfield, Kan., February 14, aged 56.

Charles E. V. Gissy, M.D., Washington University, St. Louis, 1875, died at his home in Breese, Ill., February 21, aged 47.

Charles S. Hinman, M.D., Dartmouth Medical College, Hanover, N. H., 1875, died at his home in West Charleston, Vt., aged 54.

Miscellany.

Yellow Fever Investigation.—We give below the abstract of the interim report published by H. E. Durham and the late Walter Myers, of the Liverpool School of Tropical Medicine's yellow fever investigation, in the *British Medical Journal* of February 23. The complete report was interrupted by the authors being attacked by yellow fever, and, as previously noticed in The Journal, the results to Dr. Myers were fatal. This abstract was published before its authors could have known of the results reported by Reed, Agramonte and Carroll, in The Journal of February 16. The authors' conclusions are as follows:

1. Sufficient search reveals the presence of a fine small bacillus in the organs of all fatal cases of yellow fever. We have found it in each of the fourteen cadavers examined for the purpose. In diameter the bacillus somewhat recalls that of the influenza bacillus; seen in the tissues it is about 4 microns in length. 2. This bacillus has been found in kidney, in spleen, in mesenteric, portal and axillary lymphatic glands, etc., taken from yellow fever cadavers directly after death. In the contents of the lower intestine apparently the same bacillus is found often in extraordinary preponderance over other microorganisms. Preparations of the pieces of "mucus," which are usually, if not always, present in yellow fever stools, at times may almost present the appearance of "pure culture." 3. Preparations of the organs usually fail to show the presence of any other bacteria, whose absence is confirmed by the usual sterility of cultivation experiments. 4. It is probable that

this same bacillus has been met with but not recognized by three other observers. Dr. Sternberg has mentioned it; and he has also recorded the finding of similar organisms in material derived from Drs. Domingos Freire and Carmona y Valle; but he did not recognize its presence frequently, probably on account of the employment of insufficiently stringent staining technique. 5. It is probable that recognition has not been previously accorded to this bacillus by reason of the difficulty with which it takes up stains (especially methylene blue), and by reason of the difficulty of establishing growths on artificial media. 6. The most successful staining reagent is carbolic fuchsin solution (Ziehl), diluted with 5 per cent. phenol solution (to prevent accidental contamination during the long staining period), immersion for several hours, followed by differentiation in weak acetic acid. Two hours staining period may fail to reveal bacilli, which appear after 12 to 18 hours. The bacilli in the stools are often of greater length than those in the tissues, and they may stain rather more easily; naturally the same is true of cultures. 7. Since the bacilli are small and comparatively few in numbers they are difficult to find. To facilitate matters at our last two necropsies (14th and 15th) a method of sedimentation has been adopted. A considerable quantity of organ juice is emulsified with antiseptic solutions, minute precautions against contamination and for control being taken; the emulsion is shaken from time to time and allowed to settle. The method is successful and may form a ready means of preserving bacteria-containing material for future study. The best fluid for the purpose has yet to be worked out; hitherto normal saline with about one-fifth per cent. sublimate has been employed. 8. Pure growths of these bacilli are not obtained in ordinary aërobic and anaërobic culture tubes. 9. Some pure cultures have been obtained by placing whole mesenteric glands (cut out by means of the thermo-cautery) into broth under strict hydrogen atmosphere. Investigations into the necessary constitution of culture media for successful cultivation are in progress. 10. Much search was made for parasites of the nature of protozoa. We conclude that yellow fever is not due to this class of parasite. Our examinations were made on very fresh organ juices, blood, etc., taken at various stages of the disease, with and without centrifugalization, and on specimens fixed and stained in appropriate ways. We may add that we have sometimes examined the organs in a fresh state under the microscope within half an hour after death. 11. The endeavor to prove a man-to-man transference of yellow fever by means of a particular kind of gnat by the recent American Commission is hardly intelligible for bacillary disease. Moreover, it does not seem to be borne out by their experiments, nor does it appear to satisfy certain endemiological conditions. It is proposed to deal more fully with the endemiology and epidemiology of the disease on a later occasion. 12. We think that the evidence in favor of the etiological importance of the fine small bacillus is stronger than any that has yet been adduced for any other pretended "yellow fever germ." At the same time there is a much further work to be done ere its final establishment can be claimed. The acquisition of a new intestinal bacterium would explain the immunity of the "acclimatized."

Extra-respiratory Cough.—A. Martiner devotes an article, in the *Presse Médicale* of January 23, to the reflex coughs which occur without symptoms in the respiratory passages. The aim of treatment should be: 1, to diminish the sensibility of the mucous or serous membrane starting the reflex; 2, to diminish the excitability of the nerve center presiding over the cough; 3, to act on the centrifugal routes, and 4, to induce the will to control the bulbar center. The first of these indications includes the removal of the cause and, sometimes, anesthetizing the mucosa. Frequently the cough is arrested instantaneously by cocainizing the nasal fossæ or drinking a chloroform-cocain potion. Opium and its derivatives answer the second indication in ordinary coughs, but are injurious in this so-called reflex cough. The bromids are useful and also Meglin's pills—5 cg. each of extract of hyoscyamus, extract of valerian and zinc oxid, for one pill—to be taken three times a day. The centrifugal routes are sometimes brought under control by applying two Milan plasters over the phrenic nerve, one in the cervical region above the clavicle, between the two heads of the sterno-cleido-mastoid muscle; the other at the lower edge of the ribs, over the "phrenic button." This measure has proved particularly useful in reflex coughs accompanied by hyperesthesia along the course of the phrenic nerve. The will-power should be strengthened by suggestion.

Societies.

COMING MEETINGS.

Medical Society of the Missouri Valley, Omaha, Neb., March 21, 1901.

Tri-State Medical Society of Iowa, Illinois and Missouri, Keokuk, Ia., April 2-3, 1901.

Medical Association of the District of Columbia, Washington, D. C., April 2, 1901.

Tennessee State Medical Society, Nashville, April 9-11, 1901.

Florida Medical Association, Jacksonville, April 10, 1901.

Western Ophthalmological and Otolaryngological Association, Cincinnati, Ohio, April 11-12, 1901.

Medical Association of the State of Alabama, Selma, April 16, 1901.

Medical Society of the State of California, Sacramento, April 16-18, 1901.

South Carolina Medical Association, Florence, April 17, 1901.

Medical Association of Georgia, Augusta, April 17, 1901.

Louisiana State Medical Society, New Orleans, April 18-20, 1901.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 23-26, 1901.

Texas State Medical Association, Galveston, April 23, 1901.

American Association of Genito-Urinary Surgeons, Old Point Comfort, April 30, 1901.

Association of American Physicians, Washington, D. C., April 30, 1901.

Italian Congress of Pediatry.—The general secretary of this Congress, which will convene for its fourth session at Florence, October 15, is Dr. Luigi Concetti of Naples.

German Congress of Surgery.—The date appointed for the thirtieth session of the Congress is April 10 to 13, and the place, Berlin. Professor Czerny, of Heidelberg, has the arrangements in charge.

German Congress of Dermatology.—The seventh session of the Congress opens at Breslau, May 28, with addresses by Finsen, Schiff, Freund and others. Professor Neisser of Breslau is to preside.

Southwestern Iowa Medical Association.—The seventh annual convention of this Association was held in Creston, February 21. Dr. Vernon L. Traynor, Council Bluffs, was elected president; Dr. Donald Macrae, Council Bluffs, vice-president; Dr. Frank E. Sampson, Creston, secretary, and Dr. Joseph P. Claybaugh, Creston, treasurer.

Columbus (Ohio) Academy of Medicine.—The annual meeting and banquet of the Academy was held February 26, President Dr. James C. Lawrence in the chair, and Dr. Theodore W. Rankin officiating as toastmaster. Dr. Dudley P. Allen, Cleveland, was the guest of honor, and responded to the toast: "The Profession in the Metropolis of Ohio."

Oneida County (N. Y.) Medical Association.—The members of the First District Branch of the New York State Medical Association, residing in Oneida County, met at Utica, February 25, and organized the Oneida County Medical Association, with the following officers: Dr. William B. Reid, Rome, president; Dr. Henry C. Palmer, Utica, vice-president; Dr. J. O. Stranahan, Rome, secretary, and Dr. John Groman, Utica, treasurer.

New York State Medical Association.—A special meeting of the members of the First District Branch was held in Utica, February 25, for the purpose of reorganizing the branch association. The meeting was opened by an address of welcome by the president, Dr. Charles B. Tefft, Utica, after which the following officers were elected: Dr. J. Wallace Douglas, vice-president, Boonville; and Dr. Edgar H. Douglas, Little Falls, secretary and treasurer.

Sullivan County (N. Y.) Medical Association.—The members of the Fifth District Branch of the New York State Medical Association, residing in Sullivan County, met at Liberty, February 19, for the purpose of organizing the Sullivan County Medical Association. The following officers were elected: Dr. Charles S. Payne, Liberty, president; Drs. Frank P. Howser, Centreville Station, and Stephen W. Wells, Liberty, vice-presidents; Dr. John L. C. Whitcomb, Liberty, secretary, and Dr. Charles W. Piper, Wurtsboro, treasurer.

PHILADELPHIA NEUROLOGICAL SOCIETY.

Meeting held February 25.

President Dr. James Tyson in the chair.

Astereognosis.

Drs. W. H. Teller and F. X. Dercum exhibited a case of this affection. The patient was a man 30 years of age, who was, on Nov. 17, 1900, struck on the head by a base-ball bat, and was admitted to the Jewish Hospital six days later, unconscious. A small cut was present over one eyebrow, and there was a depression in the region of the fissure of Rolando. There was complete paralysis of the right arm and leg, and deviation of the right eyeball. An incision was made over the depression and the bone removed. The membranes of the brain were congested but intact. A cot extending for two inches down into the brain substance was removed, and on removal a small amount of brain substance discharged. The patient, who had been unconscious for six days, several hours after the clot was removed regained consciousness and, on the following day, the paralysis of the right arm and leg began to disappear.

Six weeks later Dr. Dercum found astereognosis present. At this time the man was totally unable to recognize anything placed in the right hand, such as a spoon, scissors, or other object, but these could be at once determined by the left hand. Tactile sensation was partly preserved on the right side. Hypesthesia was marked in the region of the extremities. When the eyes were shut with the right hand, the man was unable to tell the position in which the fingers were placed. There was some defect of the muscle sense. When he would stand and close the eyes he would sway considerably. There was more or less ataxia of the right arm. When he closed his eyes he was unable to touch the tip of the nose without considerable trouble. It was evident that he had a lesion of the parietal lobule involving the parietal convolution, giving rise to the astereognosis.

Drs. George L. Walton and Walter E. Paul, of Boston, by invitation, read a paper entitled "Astereognosis with Illustrative Cases." Dr. Walton stated that the literature on this subject had been considerably added to by Dana, Burr, Sailer, Mills, Keen and other writers. As to the differentiation between hysteria and an organic lesion in which astereognosis is present, if hysteria, this symptom will disappear suddenly. It appears that the muscle nerve fibers follow a different course from those of the cutaneous sensation. The ability to close the eyes, and to recognize objects depend on contact sense and muscle sense. The first case reported was one who had occipital headache, involuntary movement of the eye, and ankle-clonus. This patient was unable to recognize objects with the left hand. The temperature and pain sense were lost. The patient gradually became worse and an operation was done by Dr. Warren. The surface of the brain presented no abnormality. A cyst was, however, detected lower down. Six weeks later the paralysis gradually disappeared, but death subsequently occurred.

The second case had been seen on Dec. 7, 1900, the patient stating that for some time there had been numbness of the left hand and later numbness of the left leg. Slight aphasia was also present. When seen she was unable to recognize an object such as a bottle, but could recognize a key. A short time later double optic neuritis appeared. In this case an operation was done and a growth, the nature of which was doubtful, removed. No change in the paralysis occurred, except that the aphasia became more marked as well as mind blindness.

In a third case the paralysis was limited to the lower extremities. The patient could distinguish a pencil if applied transversely over the foot. In this case there was a history of paralysis of the left leg, and attacks of Jacksonian epilepsy occurring in one toe on the left side. Double optic neuritis was present. The Babinsky reflex was present. Pain and temperature sense were normal. In this case an opening was made in the skull in the region of the fissure of Rolando, and just behind the fissure the remains of an old clot found. The next day the motor paralysis extended to the hand. Articles placed in the hand could not be recognized. Convulsions occurred a few weeks later, but subsequently she regained a moderately good condition. The speaker does not believe that experiments on the lower animals would be of a very great value in the determination of the exact nature of astereognosis. In over fifty old cases of hemiplegics astereognosis was not present in thirty of them.

Dr. F. X. Dercum, in discussing this paper, expressed belief that we have to deal with both a motor and a sensory astereognosis.

Dr. Charles W. Burr thought the term "astereognosis sense" not altogether a good one; "asterognosis faculty" seems preferable. He once saw a man who had suffered from a fracture of the skull, from which he had recovered. When seen by the speaker there was no disturbance of sensation. He knew the position of pain, of heat and of cold, but with his eyes closed could not recognize a single object. He also knew of a case of mind blindness in which heat and cold were recognized. In his opinion there is some center in the brain which stores up things which have been felt, and this center might be in the posterior parietal lobule.

Dr. J. Hendrie Lloyd stated that he at one time treated a case in which the patient could not tell the term to apply to an object placed before her, such as a knife, key or handkerchief, but when these were placed in her hand they could at once be recognized.

Dr. Wm. G. Spiller spoke of different writers who had made investigations on this subject. He referred to the different tracts in the cord, such as that conveying tactile sense, some writers believing this to be in the lateral columns while others place it in the posterior.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Meeting held February 18.

Parker Syms, M.D., *President.*

Ulcer of Placenta; Umbilical Cord Severed Before Birth.

Dr. Eden V. Delphey presented this specimen. The patient, a multipara, aged 32, while hanging up clothes suddenly experienced a tumultuous sensation in her abdomen, and this immediately followed by the onset of labor, though she had been pregnant only 7½ months. That evening, or about twelve hours later, Dr. Delphey performed manual dilatation, and with the aid of forceps delivered a dead fetus. It was found that there was only a short stump of umbilical cord attached to the child at its birth, though the total length of the cord was fourteen inches. Examination of the placenta after its spontaneous delivery revealed the presence of an ulcer, one inch in diameter, and this the pathologist reported to correspond to a broken down gumma. Two hours after the birth of the child the mother developed symptoms of internal hemorrhage and severe collapse, and died.

Lack of Uniformity in Prescribing Myopic Glasses.

Dr. S. Busby Allen read a paper on this subject. He said that carelessness in prescribing eyeglasses for myopes leads to much distress on the part of the patient, and if not relieved the ultimate effect may be morbid introspection and even mental deterioration. There is considerable difference of opinion concerning the effect of accommodation.

Dr. Henry Oppenheimer pointed out that by proper attention to the habits of life of many children much can be done toward preventing the development of a high degree of myopia. Such children should be encouraged to participate in out-door games, and should be prevented from reading in a poor light, or in faulty positions which tend to produce congestion of the vessels of the head. It is most important to correct, as far as possible, the effort at convergence.

Dr. Frank Skeel said that the apparent lack of uniformity in prescribing glasses for myopia is explained by the necessity for treating each case by itself. For low degrees of myopia, it is his custom to prescribe glasses which fully correct the error; for high degrees of myopia, very little can be done. When the myopia is found to be increasing, marked benefit will often accrue from keeping the eyes under the influence of atropin for six weeks or more.

Dr. J. H. Woodward agreed with what had been said about the great importance of correcting very early in life the slight degrees of myopia. Where it is moderate in degree, glasses for distance should be worn, also for reading, in order to strengthen the muscles of accommodation. There would be less myopia among our school children if they were not so overworked in school.

Dr. J. Herbert Claiborne said that it had been his practice for many years to endeavor in youth to give the myope as nearly as possible perfect distant vision, the glasses being worn for both near and distant work. By a process of education the muscles of accommodation can be readily accustomed to this change.

A New Operative Method of Exposing the Seminal Vesicles and the Prostate for the Purpose of Extirpation or Drainage.

Dr. Eugene Fuller read a preliminary report on this subject. It will appear in The Journal.

A Contribution to the Bottini Operation for the Radical Relief of Prostatic Obstruction.

Dr. L. Bolton Bangs, author of a paper on this topic, expressed the opinion that enlargement of the prostate usually begins in early life. Although he has had an experience of three years with the Bottini operation, he looks upon it as a serious one, for which the patient should be most carefully prepared. The operation requires skill, and should be done very slowly, as this slowness is the best guarantee against secondary hemorrhage. The operation is apt to be followed by frequent and scalding urination, and with bloody urine for twenty-four or forty-eight hours. In from one to three weeks there is very often secondary hemorrhage. From the tenth to the fourteenth day dark particles of burned tissue make their appearance in the urine; occasionally there will be larger fragments. In 11 out of his 35 cases there was fever, and 6 had distinct chills within twelve hours after the operation. The patient should not be allowed up for one week, and should not resume his occupation for about two weeks more; in any case, he should be kept under careful observation until the urine becomes clear and there is no longer irritation. It is important that during the operation the electric current be kept up sufficiently to preserve the blade of the instrument constantly at a white heat. In one of his cases it failed in the midst of the operation, and he was compelled to complete the work with a Paquelin cautery. The result was instructive, for the Paquelin cautery had produced a thick, leathery eschar, but no action in the adjacent tissues, while the galvanocautery had produced a peculiar change in these tissues, which could be readily appreciated by the surgeon, yet the eschar was fine and thin. In 20 per cent. of his cases an increased amount of spontaneous urination resulted, while 20 per cent. were not improved. The greatest benefit was noted in those who had been largely or completely dependent on the catheter. One death was attributable to the operation, having been caused by sepsis, and as two others had occurred within two weeks, they were mentioned, though he does not feel at all sure that the operation was either directly or indirectly, responsible for them.

Dr. Willy Meyer said that he had done this operation on thirty-nine patients. He called attention to the fact that gonorrhea was a factor in about 75 per cent. Local anesthesia is ordinarily not advisable, but if employed better results will follow from mixing two-thirds of an ounce of a 2 per cent. solution of cocain with one ounce of a 3 per cent. solution of eucain. Where the kidneys had been normal he used either general or spinal anesthesia. The latter acted very well in the five cases in which it was tried. As he believes the depth of the incision in the Bottini operation is of importance, he is in the habit of repeating the posterior incision at the time of operaton. The pain after the operation is often intense, and for this reason he has adopted the plan of tying in a smooth Mercier catheter. In this way, much relief is afforded, and if the precaution to keep the urine loaded with antiseptics is taken, the effect of such a practice is to set up a sort of continuous antiseptic irrigation. He is confident that it is a valuable procedure, though not in accordance with established practice at the present time. The after-treatment is certainly arduous and most important in a case operated on by Bottini's method. He thinks that prostatectomy will come to be the operation for "hard" prostates and those having a hard nucleus.

Dr. Eugene Fuller said that he had long been an earnest advocate of prostatectomy, and the results from Bottini's method certainly do not make him feel like abandoning the method he has so long championed and practised. He is of the opinion that the Bottini method will result in relapses from the formation of the cicatricial tissue—indeed, his chief objection to that method is in the fact that one must burn through the tissues of the bladder to reach the prostate. Another serious objection is that it provides no means of securing for the bladder the surgical rest which, in its diseased state, is so often imperatively demanded.

Dr. J. W. S. Gouley said that the selection of the operation should be founded on an exact diagnosis. It should be remembered that Mercier failed in his prostatotomies and prostatectomies where there had been any considerable enlargement of the supramontanal folds. He believes that the Bottini operation is contraindicated in those cases in which the third lobe projects 2 or 3 cm. into the bladder. He himself introduced Mercier's operation into this country, and has performed it upwards of fifteen times. Where the prostate is very large, irrespective of whether it is soft or hard, prostatectomy is the operation to be selected, and he believes its dangers have been much exaggerated. He has dissected about one thousand prostates, and as an outcome of this experience is in a position to assert that the really hard prostate is of rare occurrence.

Dr. S. Alexander paid a tribute to Dr. Bangs for his very fair and judicial presentation of his experience with the Bottini operation, and pointed out that this paper has placed the profession in possession of certain new facts. The author has shown that the operation is not always successful, that the period of convalescence is longer than we have been led to suppose, and that he can not claim that a permanent groove remains in the prostate, for he has seen contraction of fibrous tissues as a result of a burn. Through the courtesy of Dr. Bangs, he was allowed to examine a prostate taken, at autopsy, from a man who subsequently died from an entirely independent cause. That specimen showed scars, the result of contraction, but no grooves. When a prostatectomy is done, the whole prostate is not taken out, but only those portions causing the obstruction. He does not deny that his operation of prostatectomy is associated with a high rate of mortality and is a very difficult one, but he contends that it is founded on a correct principle, and that the bad results are purely the outcome of a defective technique and of our general ignorance of the subject. He believes the Bottini operation a valuable form of prostatotomy for certain cases. It should be constantly borne in mind that the principal cause of obstruction is not intravesical.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting, January 22.

Arsenious Acid in Malignant Growths.

Dr. H. M. Sherman occupied the chair, in the temporary absence of the president, Dr. D. W. Montgomery.

Dr. Howard Morrow read a paper by Dr. Montgomery and himself, entitled "Arsenious Acid in the Treatment of Cancer of the Nose and Face," and presented several cases. The paper consisted of the histories of some patients so treated, and described the technique and the indications for its application. In the clinic they had long talked of the advisability of taking up this mode of treatment, especially since the publication of the articles by Dr. A. R. Robinson, of New York, in favor of it. The histories of the patients shown ran as follows:

Mrs. R., aged 67, entered the clinic on Aug. 27, 1900, showing an epithelioma on the right temple, one-half an inch behind the right eye-brow; it was of about the size of a five-cent piece, and not ulcerated. The paste was applied for two days in succession; it healed kindly in three weeks, and the remaining scar is hardly perceptible.

F. M., aged 60, entered the clinic on Aug. 28, 1900, with an epithelioma of the right cheek, just below the outer canthus, which he said had lasted for ten years. The epithelioma was the size of a dime, ulcerated in the center, and surrounded by a typical waxy border with dilated capillaries crossing over it.

He supposed it to have started from the burn of a sulphur match. The paste was applied three times, for twenty-four hours each time; the resulting sore healed in four weeks, and the scar is very small.

T. B., aged 73, entered the clinic July 6, 1900, for an epithelioma of the nose, which he said had lasted for five years. The lesion was slightly larger than a split bean, was ulcerated in the center, and was surrounded by a hard, raised border, covered with dilated capillaries. There were two applications of the paste, of twenty-four hours each; the resulting sore healed uneventfully in four weeks, the scar being hardly noticeable.

C. F. S. entered the clinic on Aug. 27, 1900, suffering from a rodent ulcer on the right side on the upper lip, over one-half inch in diameter; it had an ulcerated center, and the border was hard, waxy, and infiltrated. There was a great amount of infiltration throughout the right half of the lip. The paste was applied four times for twenty-four hours each time, and the infiltration entirely disappeared, the lesion healing in five weeks, leaving nothing at present but a hypertrophied cicatrix. This was the most difficult case of all to treat, as the position was awkward and the infiltration deep.

Two other patients had been treated and discharged as cured, but the authors had been unable to trace them. They thought that all cancers situated at mucocutaneous junctions, or on mucous surface, in which there is apt to be early involvement of the lymphatic nodules, are best treated by the excision of the growth itself, and adjacent lymphatic channels and nodules; but that the small-celled variety, commonly known as superficial epitheliomas, or rodent ulcers, and usually situated upon some part of the face, are best treated by methods other than operative. The most effective of the non-operative methods are the actual cautery and the various caustics. The caustics commonly employed are chlorid of zinc, chromic acid, caustic potash, formalin, and arsenic. Other methods have been used, such as injections of silver, arsenic, alcohol, aniline dyes, toxins, and electrolysis, but the results have not been satisfactory. Treatment by the *x*-ray is uncertain, many cases not healing at all, and in all it is very slow. Liquid air has been used experimentally in a few instances; it is more painful than caustics and no better in its results.

The patients presented had been treated by arsenic. The strength of the arsenical paste has considerable to do with the result. Marsden never used arsenic stronger than two parts of the arsenious acid to one of the diluent, nor weaker than equal parts of the arsenic and diluent.

In a great many of the recipes given by writers the arsenic is used in smaller quantities; in many, in ridiculously small. The paste used by the authors contained 5 parts of arsenious acid, 3 of gum arabic, and 2 parts of cocain. Just before applying, this powder was mixed with enough water to make a thick paste; the amount of water used is of importance, for if not enough is added to the powder the paste will ball, and not apply well, and if too much is added the paste will run. It will be observed that this paste is only as strong as the weakest recommended by Marsden.

The area to be cauterized was first surrounded by a piece of adhesive plaster, then the paste was applied and covered over with gauze or cotton held in place with adhesive plaster. This dressing was left on for twenty-four hours. Frequently the dressing was applied for several days in succession until there was a marked gangrenous slough. One objection to this treatment was the slight amount of pain felt after the cocain had lost its effect, and another is the acute inflammatory edema which sometimes closes one or both eyes. The edema quickly subsides, however, after the paste is removed. In many cases the cosmetic results from the arsenic treatment are superior to those following surgical means, and this is an important point with growths on the face. Arsenic certainly seemed to have a selective action on malignant tissue, as they had tried it on two lesions that were not cancer, and where it only caused a trifling reaction. One was a large vascular mole, and the other a chronic localized infiltration from pus infection, and it had no effect on either except to cause slight congestion of the parts. It seemed to them that it was just as necessary to have experience in the use of arsenic as it was in the use of the knife in the treatment of cancers. One has to know something of the strength of the paste which should be used, the length of time to apply it, and the amount of tissue to be destroyed. One needs to know what accidents to fear, and also what appearances, apparently threatening, may be disregarded. The inflammatory edema, for instance, while very threatening looking, is in reality very innocent. The hole made by the cauterization is also very portentious looking, but it is wonderful what a small scar it leaves on healing. A large amount of bone may be laid bare at the bottom of a huge ulcer, and yet the lesion may heal kindly without any necrosis of the bone. Immediately after cauterization, on looking at the horrid disfigurement, one vows never to use arsenic again, but when the result is complete those vows are forgotten.

Dr. T. W. Huntington said that these cases show very satisfactory results of the treatment, but not more nor less than from the use of the knife. While recognizing these cases as a form of this disease, he hardly believes that they were the true, or the highest degree of, malignant epitheliomas. There is a difference in the malignancy brought about by the age of the growth and the conditions under which it appears. The location in these makes the diagnosis, in his mind, a little doubtful. He has removed many such tumors, with the same results, and with less pain and suffering. Several years ago, in conjunction with Dr. Cluness, he used the paste with considerable success. The results finally were not as satisfactory as he desired; some were bad, afterward showing a return with a high degree of malignancy.

Dr. H. M. Sherman voiced the opinion of Dr. Huntington as to the degree of malignancy of the disease, and he also prefers the knife as more certain and more thorough in its work.

Dr. Howard Morrow said they had treated several cases with formalin, by brushing it over the surface, but that there was much more pain than by the treatment with the paste. Several cases seemed to have gone on with questionable results, the disease spreading over the nose and forehead. The cases shown were probably not truly malignant. The tendency to malignancy usually increases with age.

Dr. D. W. Montgomery said that Dr. Huntington's statement regarding malignancy and superficial cancer of the face and nose is true. There is a difference of degree and of kind. Several years ago a woman, with a rodent ulcer close to the eye, came to the clinic. The ulcer was removed with the knife and a flap from the forehead filled in the incision. A year and a half afterward she returned and could not close the eye. There was paralysis. Metastases had occurred either from the knife or before the operation. She had been previously operated on in Stockton. This case was originally a typical rodent ulcer, but had degenerated and become malignant. Another case similar in character was seen some years ago, which he refused to treat with arsenic. The tumor had grown from a sebaceous gland. It was a nodular epithelioma which was removed by the knife. Four months after, the man returned with a scar too large and extensive for the area involved in the first operation. The scar tissue was taken out and found to be cancerous. He then sent the patient to Dr. Sherman, who removed some nodules from the neck, but whether they were cancerous or not was not demonstrated. The operation was an extensive one and required the removal of a large amount of tissue. The patient has remained well for three years. In such a case Dr. A. R. Robinson would have used paste. There are some cases of cancer of the face where the tumor is cut out repeatedly, which, unless treated by arsenic, formalin, chromic acid, or the *x*-ray, never heal up. There is one danger with the knife, namely, one is never certain as to the exact amount of healthy tissue that should be removed, for the tissues retract and draw away, and yet the operator believes that all the diseased structures have been cut out. He has seen such work frequently done. This is most common in superficial growths of the mucous membranes and of the skin. More surface than the area of the disease must always be destroyed. Arsenious acid seems to have a selective action on cancerous tissue.

Spina Bifida.

Dr. H. M. Sherman exhibited a specimen of spina bifida, showing a small cyst imbedded in the middle of the tumor, Morton's fluid was used for injection. After the operation the tumor contracted somewhat, and then remained stationary. The child became marasmic, seemed about to die, and was sent home, but subsequently came back for the removal of the tumor, which *pari passu* grew with the child. An incision was made through the skin and fatty tissues, and the sac tied off. He would not use Morton's fluid in many of these cases, though he believes that it does not interfere with the cord, and if it flows into the canal, does no harm. In this case, on account of the very small neck of the cyst and size of the tumor, the fluid was not allowed to enter the canal. Morton's fluid, in small tumors, covered by skin, may be advisable. If, after the use of the fluid, the mass still remains cumbersome and in the way, removal is best.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Infantile Colic.

Illoway, in *Phil. Med. Jour.*, states that the treatment of infantile colic is divided into: 1, *the immediate relief of the* infant, and 2, the removal of the exciting cause. As treatment for the first he gives *the following formula recommended* by Starr:

℞.	Sodii bicarb	gr. xv	1	
	Syrupi	℥ss	16	
	Aq. menth. pip. q. s. ad	℥ii	64	

M. Sig.: One teaspoonful as needed for a child of 1 month.

It may be made more efficient by the addition of two drops of aromatic spirits of ammonia to each dose, or in severe cases, one drop of spirits of chloroform. Or, in severe cases, he advises potassium bromid or chloral as follows:

℞.	Potassii bromidi	gr. xv	1	
	Chloralis hydratis	gr. viii		5
	Syrupi	℥ss	16	
	Aq. menth. pip. q. s. ad	℥ii	64	

M. Sig.: One teaspoonful at one dose and repeat if necessary two or three times at intervals of half an hour.

Illoway has found that infants readily become accustomed to the opiates and require increased doses from day to day; consequently he prefers the following *formula:*

℞.	Chloralis hydratis	gr. vi-x		36-66
	Mucilag. acaciæ	ʒi	4	
	Lac. asafetidæ	ʒii	8	
	Essent. anisi	ʒss	2	
	Aq. feniculi	ʒiii	12	
	Syr. rhei arom	ʒiss	6	

M. Sig.: One teaspoonful for a dose. To be repeated in one-half hour if necessary, for an infant from 2 to 6 weeks old. For older infants the dose of chloral can be increased if necessary to 1½ grains.

He states that he has found nothing superior to the milk of asafetida for immediate relief and the infants will take it very readily. It is innocuous and can be placed with perfect safety in the hands of the mother or nurse. He gives it in the following combination:

℞.	Lac. asafetidæ	℥ss	16	
	Syrupi mannæ	ʒiiss	10	
	Essent. anisi	ʒss	2	
	Syr. rhei aromat	ʒi	4	

M. Sig.: One teaspoonful at a dose.

He states that the administration of a few teaspoonfuls of warm sweetened fennel tea after administering the above will not only do away with the taste in the infant's mouth, but to some extent increases the action of the asafetida.

Dewee's carminative, which was official in the U. S. P. in 1880, and known as mistura magnesiæ et asafetidæ, and which was mentioned by Illoway in his article, is composed *of the* following:

℞.	Magnesii carbonatis	ʒiss	6	
	Tinct. asafetidæ	ʒiiss	10	
	Tinct. opii	m. xix	1	30
	Sacchari	ʒiiss	10	
	Aquæ q. s. ad	℥iv	128	

M. Sig.: One teaspoonful, to be repeated in half an hour if the infant is not relieved. This sized dose is calculated for a child 2 weeks or 1 month old.

Occasionally, he states, in infants with a peculiarly sensitive tract, an opiate may be required and the camphorated tincture answers best prescribed as follows:

℞.	Tinct. opii camph	℥i	32
	Aq. menthæ pip	℥v-℥vss	160-175
	Syr. rhei arom	℥i-℥iss	32-48

M. Sig.: One teaspoonful, to be repeated in half an hour if necessary. A third dose can be given in two hours.

In colic due to over-feeding or to indigestion, to constipation or to improper food, the suffering of the infant is quickly relieved by the following:

℞.	Misturæ rhei et sodæ	℥ss	16	
	Spts. etheris comp. (Hoffman)	m. xl	2	66
	Syr. rhei arom. q. s. ad	℥i	32	

M. Sig.: *One-half teaspoonful, to be repeated in one-half to* three-quarters of an hour for an infant 3 or 4 weeks old. For younger infants the dose is fifteen to twenty drops; for older ones, from one-half to one teaspoonful, according to age.

REMOVAL OF THE CAUSE.

If due to flatulency where the digestion is retarded, Starr advises the administration through the whole colicky period of vinum pepsini, three times a day in fifteen-drop doses.

The following is recommended by Thompson for the same condition:

℞.	Sodii bicarb	gr. iii	18
	Papainæ	gr. i	06

M. Ft. chartula No. i. Sig.: One such after each meal.

Or,

℞.	Sodii bicarb	gr. xlv	3
	Spts. ammon. arom	m. xv	1
	Spts. chloroformi	m. xv	1
	Syrupi	ʒiiss	10
	Aq. destil. q. s. ad	℥ii	64

M. Sig.: One teaspoonful after each meal.

Incontinence of Urine in Children.

J. Blake White states that *the following combination* is of good service:

℞.	Sodii benzoatis		
	Sodii salicylatis, āā	gr. xxx	2
	Tinct. belladonnæ	m. xv	1
	Aquæ destil. q. s. ad	℥iv	128

M. Sig.: One teaspoonful in water four or five times a day.

The quantity of sodium salicylate may be increased to double the amount if necessary.

Methylene Blue in Treatment of Malaria.

Dr. M. Dunn states that there is no remedy equal to methylene blue in cutting short malarial fever. He prescribes it as follows:

℞.	Methylene blue	gr.ii	12
	Quininæ sulphatis	gr. ii	12
	Ferri carbonatis	gr. i	06
	Acidi arsenosi	gr. 1/50	0012

M. Ft. cap. No. i. Sig.: One such capsule every three hours.

Sodium Persulphate in Tuberculosis.

Garel, of Lyons, as noted in the *Jour. of Tuberculosis*, states that this salt can exert a very remarkable influence over the appetite and digestive organs, and as an oxidizing agent it excels even arsenic and vanadium, and is much less toxic. The *sodium persulphate should always be taken on an empty* stomach, one and one-half hours before eating. According to Nichols, *one dose of 2½-5 grains (.15-.30) in twenty-four* hours suffices. Its administration is indicated only in the earlier stages of the disease to arouse the appetite and to promote nutrition in anorexia and weak digestion.

Treatment of Acute Gout.

The following treatment of acute gout is recommended by Bartholow:

A sufficient quantity of colchicum should be given to increase the secretion from the skin, the intestinal mucous membranes and the kidneys, but nausea and vomiting should be avoided. Better results are obtained when it is combined with an alkali, as:

℞.	Vini colchici sem.	ʒiii	12	
	Spts. ammon. arom. q. s. ad	℥ii	64	

M. Sig.: One teaspoonful every three hours in water.

Or,

℞.	Tinct. colchici sem.	m. xx	1	33
	Potassii bicarb.	gr. x		66
	Aq. pimentæ q. s. ad	℥i	32	

M. Sig.: At one dose, to be repeated every three or four hours.

The following combinations are recommended by Sir Henry Halford:

℞.	Ext. colchici radicis	gr. vi		25
	Pulv. ipecacuanhæ et opii			
	Ext. colocynth. comp., āā	gr. xii		75

M. Ft. pil. No. xii. Sig.: One pill night and morning.

Or,

℞.	Ext. colchici rad.	gr. x		66
	Pulv. digitalis			
	Ext. colocynth. comp., āā	gr. xx	1	33

M. Ft. pil. No. xx. Sig.: One or two pills, to be taken three times a day.

Quinin as an Antipyretic.

Egbert, in *Merck's Archives*, favors the combination of quinin with acetanilid as antipyretic in the earlier stages of inflammatory diseases. In his opinion a fluid mixture is preferable:

R.	Quininæ sulphatis	ʒi	4	
	Acetanilidi	ʒi	4	
	Elixir arom.	℥i	32	
	Syrupi (chocolated) q. s. ad	℥iv	128	

M. Sig.: One to two teaspoonfuls every three or four hours.

By combining quinin in small doses with other cinchona alkaloids the effect of the dose is augmented. He recommends the following:

℞.	Quininæ sulphatis			
	Cinchonæ sulphatis			
	Cinchonidinæ salicylatis, āā	gr. xxx	2	

M. Ft. cap. No. xxx. Sig.: One to two capsules every three or four hours.

Thiocol in Chronic Bronchitis.

Dr. J. A. Goldmann, of Vienna, claims to have obtained splendid results in treatment of chronic bronchial catarrh with thiocol (the potassium salt of guiacol-sulfonic acid) prescribed as follows:

℞.	Thiocol	ʒiiss	10	
	Syr. aurantii q. s. ad	℥iii	96	

M. Sig.: One teaspoonful for a child, or one dessertspoonful for an adult, three times a day in milk or coffee.

As a Resolvent of Tuberculous Glands.

Descroizilles, as noted in *N. Y. Med. Journal*, recommends the following as a local application:

℞.	Tinct. iodi	gr. xv	1	
	Magnesii sulph.	ʒiiiss	14	
	Sodii chloridi	ʒx	40	
	Aquæ destil.	℥ivss	144	

M. Sig.: To be applied locally on compresses.

A Lotion for Checking Night Sweats of Phthisis.

Herschfeld reports excellent results from sponging the body with the following mixture:

℞.	Balsami peruvianæ	gr. xxx	2	
	Acidi formici			
	Chloralis hydratis, āā	ʒiiss	10	
	Alcoholis	℥vi	192	

M. Sig.: Sponge the patient's body at night.

Acute Bronchitis in Children.

The following prescription is recommended by A. Agramonte

℞.	Solutionis ammon. acetat	ʒiv	16	
	Spts. etheris nitrosi	ʒiss	6	
	Syrupi ipecacuanhæ	ʒiss	6	
	Syrupi senegæ	ʒi	4	
	Syrupi limonis q. s. ad	℥iv	128	

M. Sig.: One teaspoonful every four hours.

The above combination will produce elimination from the skin, kidneys and bronchial mucous membrane.

Correction: In last issue, on p. 594, the second prescription under "Treatment of Blepharitis," should have Vaselini ʒiii instead of gr. iii.

Medicolegal.

Seven Thousand Dollars for the Loss of an Eye.—The Court of Civil Appeals of Texas, says, in the case of the De La Vergne Refrigerating Machine Company vs. Stahl, that the verdict here returned of $8000 is much larger than that in any case which it has been able to find, or which counsel seem to have been able to find, involving the loss of an eye, with the usual consequences of such injury. Here the party seeking to recover damages therefor was a young man, a mechanic, 24 years of age, when hurt. And while the court considers $8000 as excessive compensation in such a case, it holds that the loss of an eye is a serious injury, and says that it will affirm the judgment if a remittitur of $1000 be made from the $8000.

Extent of Liability of Seller of Patent Medicines.—The case of West vs. Emanual was brought by a mother to recover from a druggist damages for the death of her daughter, alleged to have been caused by a headache powder, sold to her by the druggist. At the close of her case, and on motion of the defendant, a compulsory nonsuit was entered. This, the Supreme Court of Pennsylvania holds was proper, as the evidence introduced failed, in its opinion, to establish or disclose a cause of action. The powder, it explains, was a patent or proprietary medicine, sold by the manufacturer to drug stores, and by them sold to their customers. And in the sales of patent or proprietary medicines furnished by the compounder of the ingredients which compose them, the court holds, the druggist is not required to analyze the contents of each bottle or package he received. If he delivers to the consumer the article called for with the label of the proprietary or patentee upon it, he can not be justly charged with negligence in so doing.

Prohibiting Additional Hospitals Where Built up.—A Pennsylvania act of 1899 for the protection of public health, prohibits the establishing of maintenance of additional hospitals, pest-houses, and burial grounds in the built-up portions of cities. In construing this, in the case of Commonwealth vs. the Charity Hospital of Pittsburg, the Supreme Court of Pennsylvania holds that it was properly decided in the court below that the phrase "built-up portions of cities" must be understood in its ordinary and popular meaning, and with reference to the object of the act, viz., the protection of the public health, the object of the act being presumed to be to remove supposed sources of contagion from immediate contact with a large population. It also approves of construing the word "additional" to refer to new buildings not already established, and not to mean in addition to the total number then maintained in the whole of the city. It also seems to think that the act is single in its purpose, namely, to protect the public health, and at the same time a general act, for the protection of the public health throughout the commonwealth, regulating the location of the institutions in questions by prohibiting them in all the more populous places of the state, down to a certain line, where the supposed evil does not exist. Nor does it consider that the act deprives a hospital of its property, or the use of it, without due process of law, or denies to it the equal protection of the law, in contravention of the federal constitution.

County Not Liable for Treatment of Pauper Inebriate.—The Supreme Court of Wisconsin holds, in the case of the Put-ney Brothers Company vs. Milwaukee County, that neither the county board no any county officer has authority under any specific statute of that state to contract with a private person or corporation for the medical treatment of a pauper for what is termed "inebriety," and entail a liability therefor upon the county, his board being simply a minor incident of the treatment. Inebriates may, indeed, it says, be received into county asylums, under certain restrictions, and may be committed to a county poor-house, and the county become liable for their care in whole or in part, but the statutes seem to go no further. Thus, it appearing that the legislature of Wisconsin has provided certain methods by which inebriety or habitual drunkenness may be dealt with, the supreme court thinks it plain that it has excluded other methods, and that the general provisions requiring the county or town to care for and relieve paupers refer to necessary food, clothing, ordinary medical treatment, and the like, and not to medical treatment looking toward the cure of inebriety as a disease. There is, therefore, it insists, no authority resting in any officer or public body to incur liability for such treatment. And such being the case, there can, it holds, be no ratification by the county, as a county can not ratify the unauthorized acts of its agents which are beyond the scope of its corporate powers.

Liability for Aggravation of Latent Disease.—The case passed upon by the Supreme Court of Colorado entitled the City of Denver vs. Hyatt was brought by the latter party to recover for injuries alleged to have resulted from a fall caused by a defective sidewalk. The jury was instructed, in effect, that, if the plaintiff was predisposed to a disease which was aggravated or accelerated by reason of the accident, she was entitled to recover the damages necessarily resulting from such aggravation or acceleration; in other words, that to the extent she was caused to suffer from the effects of a latent disease, above that which she would have suffered had it not been for the accident, she was entitled to recover damages. This, the supreme court holds, was not error. The sidewalks of a city, it says, are for the use of those with organic predisposition to diseases as well as for the healthy and robust and any injuries which the former sustain by reason of defects in such sidewalks, which result in aggravating an already diseased condition, are results for which the city must respond, if otherwise liable. The evidence was clear at the time of the trial the plaintiff was suffering severely from some internal difficulties, which were manifest for the first time shortly after the accident. These troubles were of such a serious nature as to render her practically helpless. What particular internal organs were affected was not clear. The physicians called did not agree upon this proposition. Neither were they a unit as to what might have been the proximate cause of this condition. One of them gave it as his opinion that her internal condition was caused by the fall. None of the others stated directly that it was not, but they stated that they had never known such a condition as she presented due to an accident, or that such condition was not necessarily attributable to the accident. From other evidence it appeared that the plaintiff prior to the accident was a healthy and vigorous woman, and had never suffered from a deranged condition of any internal organs prior to that time; that shortly after the accident, as before stated, she was affected internally. Now, this fact, in connection with the testimony of the physicians, the supreme court thinks, was amply sufficient to warrant the conclusion by the average layman, and to sustain a jury finding, that the deranged internal condition which she manifested at the trial, and which had existed a long time prior thereto, was caused by the fall.

Not a Case for Fee-Bill Charges.—The Supreme Court of Wisconsin says that, upon the question of the value of the plaintiff's services, in the case of McNamara vs. McNamara, the jury seem to have gone widely astray. This was a controversy between son and father, both of whom were practicing physicians. The son claimed $12,000 to be due him for consulting and advising with his father in his practice for a period of five years and ten months, alleging an express promise by the father to pay what such services were reasonably worth. The answer was a general denial, with a counterclaim for money advanced. The son kept no books of account, and during the years in question never made a memorandum of a single case he treated, or concerning which he counseled or advised his father. His guess was that his father called upon him on the average of four times a week, and that he counseled with him as to four cases at each visit. His estimate was that he advised with his father concerning 1000 cases each year, and that his services were worth a little less than $2 for each case. Three physicians were called as experts for him, and were asked a hypothetical question similar to the following: "Q. Doctor, if the defendant in this case consulted with the plaintiff in a professional capacity on an average four times a week, and at each consultation discussed four patients on an average, or say sixteen to eighteen cases a week, and in consultation the plaintiff would prescribe for the different parties, give advice as to the medicine to be given, how much, and the general treatment, and all such other advice and information as is incident to a consultation for treatment, those cases being of a syphilitic nature and venereal character entirely, or 90 per cent. of them at least, what, in your opinion, would such services be worth per year?" One answered, in the neighborhood of $4000 per year; going according to the fee-bill fixing rates for consultation. The second testified that he would charge $4160 per year for such services. The third thought from $2 to $5 a consultation would be a reasonable charge . But that such testimony was of no value in arriving at a correct conclusion, the Supreme Court thinks evident from the fact that the hypothetical question did not cover the material facts in the case. The relation of the parties, the circumstances under which the services were rendered, the time employed, the nature and extent of the consultation, and all the circumstances surrounding the service, it holds, were material in arriving at a reasonable answer. The attempt to apply fee-bill charges to such a situation, it declares, was absurd. On this account, and because it considers that prejudice was aroused and no proper foundation for the recovery allowed was found in the evidence, it grants a new trial notwithstanding that the $11,000 verdict returned by the jury was cut down by the trial judge to $6000.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

New York Medical Journal, February 23.

1 State Care of the Insane. Henry W. Coe.
2 The Normal Declinations of the Retinal Meridians. (Concluded.) George T. Stevens.
3 *The Relation of Scurvy to Recent Methods of Artificial Feeding. J. P. Crozer Griffith
4 The Pathology of Intrauterine Death. (*To be continued.*) Neil Macphatter.
5 A Simple and Accurate Method of Substitute Infant Feeding. Henry D. Chapin.
6 *Clinical Report of the Use of Chloretone as a Hypnotic. A. A. Stevens.

Philadelphia Medical Journal, February 23.

7 *The Value of Sputum Examinations to the General Practitioner. M. Howard Fussell.
8 *Resection of the Rectum per Vagina. John B. Murphy.
9 Amputation of Both Feet Under Spinal Anesthesia With Cocain. Augustus C. Behle.
10 Sarcoma of the Ribs. C. C. Warden.
11 Congential Umbilical Hernia; Report of a Case, and Table of Cases Hitherto Reported. Homer E. Safford.

Boston Medical and Surgical Journal, February 21.

12 *U. S. Army Pathologic Laboratories in the Philippine Islands. Joseph J. Curry.
13 *Dysenteric Diseases of the Philippine Islands, With Special Reference to the Ameba Coli as a Causative Agent in Tropical Dysentery. Joseph J. Curry.
14 *Uterine Fibroids. Homer Gage.
15 *Dysbasia Intermittens Angiosclerotica (Intermittent Lameness of Vascular Origin). James J. Putnam.

Medical Record (N. Y.), February 23.

16 *Necessity for a More Careful Investigation as to the Cause of Outbreaks of Infectious Diseases. Alvah H. Doty.
17 *A Method of Fixation for Loose Kidneys. Robert T. Morris.
18 *Convulsions With Scarlet Fever, and the Report of a Very Severe Case With Perfect Recovery and Important Deductions from the Treatment. Herman E. Hayd.

Medical News (N. Y.), February 23.

19 *The Value and Accuracy of the Roentgen Method of Diagnosis in Cases of Fracture. Charles L. Leonard.
20 *Pharyngeal Adenoids and Hypertrophied Tonsils. J. H Woodward.
21 A Report of Some Cases of Abdominal Surgery, With Remarks on the Diagnosis of Carcinoma of the Cecum and the Surgical Treatment of Carcinoma of the Liver and Gall-Bladder. (Concluded.) Charles G. Cumston.
22 The Sustaining Treatment of Typhoid Fever, With Special Reference to the Use of Hypnotics. A. H. Buckmaster.
23 Compound Dislocation of the Knee. Walter Lathrop.
24 Nasal Obstruction; Mouth Breathing; Catarrh; Dilators. Norburne B. Jenkins.

St. Louis Medical Review, February 23.

25 *Report of Two Cases Illustrating the Transformation of Senile Warts into Carcinoma. G. Wiley Broome.

Cincinnati Lancet-Clinic, February 23.

26 *Suprapubic Cystotomy for Traumatism, With Perineal Drainage. J. G. Carpenter.
27 Alcohol. George B. Orr.
28 La Grippe. Charles P. King.

Medical Fortnightly (St. Louis, Mo.), February 11.

29 *Note on the Color of Renal and Vesical Stones Relative to Their Detection by Radiography. Reginald Harrison.
30 Diseases of the Lungs and Pleura. (Continued.) Albert Abrams.
31 The Rational Treatment of Erysipelas. Charles W. McIntyre.
32 Puerperal Convalescence. A. D. Wilkinson.

Virginia Medical Semi-Monthly (Richmond), February 8.

33 Diagnosis and Treatment of Some of the Ordinary Fractures, With Report of Cases. Wallace Neff.
34 Hydrotherapy. T. W. Keown.
35 *Suprapubic Cystotomy for Traumatism, With Perineal Drainage. J. G. Carpenter.
36 Some Remarks on the Present Status of the Physician in the United States. Emil Amberg.
37 *Chromic Acid Used as a Cauterant, Followed by Toxic Action. John W. Shaw.
38 The Location of a Six-penny Wire Nail in the Left Bronchial Tube Six Months After Its Inception, by Use of the X-ray, and Its Successful Removal. Samuel Lile.

Bulletin of the American Academy of Medicine (Easton, Pa.), February.

39 American Medical Colleges and Their Betterment. Parks Ritchie.
40 The Use of Clinic Records in Teaching Medicine. W. B. Cannon.
41 Methods of Clinical Instruction and the Management of Clinics. F. C. Hotz.
42 Remarks on Medical Education. Gustav Fütterer.

The Alienist and Neurologist (St. Louis, Mo.), January.

43 The Employment of Physical Methods in the Treatment of Nervous Diseases. (Concluded.) Aug. Hoffman.
44 The Application of Electricity in the Treatment of Some Diseases of the Nervous System. Alex. L. Hodgdon.
45 Some of the Medical and Legal Phases of Insanity. Charles O. Molz.
46 Degeneracy Stigmata as a Basis of Morbid Suspicion. James G. Kiernan.
47 *Autopsychorhythmia, or Repetition Psycho-neurosis. C. H. Hughes.
48 Study of Four Cases of Mental Disease and Four Intracranial Tumors Connected Therewith. J. W. Blackburn.
49 *Malthusianism and Degeneracy. Harriet C. B. Alexander.
50 Dangerous Paranoiacs—With Autobiography of One. J. E. Courtney.
51 Possible Cause of Insanity Among Americans in the Orient. Albert B. Ashmead.

Western Medical Review (Lincoln, Neb.), February 15.

52 *The Pathology of Fractures. Lewis Schooler.
53 *Treatment of Fractures of the Neck of the Femur. John Prentiss Lord.
54 *Some Observations on Compound Fractures. D. S. Fairchild.
55 *The Ambulatory Treatment of Fractures. Frederick Rustin.
56 *Treatment of Skull Fractures. James H. Dunn.
57 *Carcinoma of the Thyroid Gland. A. E. Halstead.

Austin Flint Medical Journal (Mason City, Ia.), January 15.

58 *Colostomy—Inguinal and Lumbar. D. W. Finlayson.
59 Derangements of Circulation and Digestion Due to Overlooked Obstruction in Upper Air Passages—Cases. J. Neimack.
60 Should the Minimum Age of Graduation for Medical Students Be Placed Higher Than Twenty-one Years? M. J. Kenefick.

Medical Bulletin (Philadelphia), February.

61 Chancroids and Chancre. John V. Shoemaker.
62 Sloughing of Bowel and Appendix. D. J. McCaa.
63 Fracture of the Skull. F. W. Frankhouser.
64 Fat: A Dietetic Specific in Phthisis Pulmonalis. Henry Y. Ostrander.

International Medical Magazine (N. Y.), February.

65 *Some of the Diseases of the Genito-urinary Tract and Their Treatment by Electricity. W. H. Walling.
66 Thermol in Typhoid Fever. Oliver L. Miller.
67 Start the Baby's Diet Right. Floyd M. Crandall.
68 Treatment of Tubercular Abscesses. James K. Young.
69 Fistula in Ano. Samuel G. Gant.
70 Treatment of Acute Catarrhal Conjunctivitis. Walter L. Pyle.
71 Sexual Neurasthenia. D. J. McCarthy.
72 Acute Catarrh of the Intestines (Enteritis Acuta). Boardman Reed.

Love's Medical Mirror (St. Louis, Mo.), January.

73 Care of the Sick. Thomas O'Reilly.
74 The Girl at Twelve. James H. Taylor.
75 The Therapeutic Effect of Iodin Demonstrated by Physiologic Action and Pathologic Demonstration. L. H. Warner.

Interstate Medical Journal (St. Louis, Mo.), February.

76 *Polyarthritis Deformans in Infancy; Apropos of a New Case Observed in a Boy of Five and a Half Months. Dr. Moncorvo.
77 Successful Cataract Operation on a Patient Ninety Years Old. James M. Ball.
78 *Observations on Influenza, Winter of 1899-1890, and the Present Epidemic. Algernon S. Barnes, Jr.
79 A Case of Dislocation of the Head of the Humerus, With Fracture at Its Anatomical Neck. F. E. Prewitt.

Peoria Medical Journal, February.

80 A Case of Pancreatitis. F. A. Guthrie.
81 Ether or Chloroform: Which? (Concluded.) William R. Allison.

Indiana Medical Journal (Indianapolis), February.

82 As to the Profession Itself; Its Rights and Privileges. O. A. Rea.
83 One Year's Obstetrical Emergencies. Lucy Woodward Gardner.
84 A Case of Recurrent Placenta Previa. E. J. Kempf.
85 Surgical Clinic. (Prostatic Cancer.) Robert T. Morris.
86 Case of Inverted Uterus of Twenty-one Years' Duration. Orange G. Pfaff.

American Medical Compend (Toledo, Ohio), February.

87 *A New Method of Hysterectomy. Byron Robinson.
88 Acute Atrophic Paralysis. C. A. Faber.
89 *Pruritus Ani. J. A. Duncan.
90 Diphtheria. Harry A. Lewis.
91 *Common Mistakes of the Physician. C. W. Motts.
92 Practical Experience With Sulphate of Magnesia. A. M. Duncan.
93 *The Doctor. J. A. Kimmell.

Canadian Practitioner and Review (Toronto), February.

94 Some Points in the Surgery of the Kidney. James F. W. Ross.
95 *Hydatid Cyst of the Tail of the Pancreas. George A. Peters.
96 Case of Dystocia from Uterus Bicornis With Contracted Pelvis. K. C. McIlwraith.

Canada Lancet (Toronto), February.

97 A Historical Sketch of Canadian Medical Education. (Continued.) Walter B. Geikie.
98 Aneurysm of the Descending Portion of the Arch of the Aorta—Rupture. Harold C. Parsons.
99 Report of a Case of Ischio-scrotal Eczema Madidans Rubrum. N. E. Aronstam.

Medical Summary (Philadelphia), February.

100 Up-to-date Treatment of Typhoid. J. R. Shellenberger.
101 Good Health. (Continued.) George J. Monroe.
102 Atmospheric Influences. J. L. Wolfe.
103 Therapeutic Uses of Ung. Crede. Max Staller.
104 Sexual Perversions. (Continued.) Drs. Pennebaker and Tripp.
105 *New Treatment of Morphinomania. Maurice B. Ahlborn.
106 A Successful Treatment of Rachitis. Henry Y. Ostrander.
107 Fever. Ben H. Brodnax.
108 The Saline Laxative or Seidlitz Dosimetric Used in Critical Age, or Change of Life, Etc. W. C. Buckley.

Pacific Medical Journal (San Francisco), February.

109 The Microscope in Medicine. S. M. Mouser.
110 The Cause of Heart Failure in Chronic Heart Disease, and Its Medicinal and Dietetic Treatment. Alfred W. Perry.
111 Dr. Havelock Ellis on the Psychology of Sex. R. W. Shufeldt.
112 How to Feed the Sexually Impotent. V. G. Vecki.

Occidental Medical Times (San Francisco), February.

113 An Address in Memory of Prof. R. Beverly Cole. Wm. Watt Kerr.
114 Angioma of the Internal Jugular Vein. Plugging of the Lateral Sinus and Ligation of the Vein. W. S. Thorne.
115 Indications for the Use of Protargol in Gonorrhea. A. B. Grosse.
116 The Plague. W. H. Kellogg.
117 *Results of Ligation of One Ureter. Minora E. Kibbe.
118 Demonstration of Patients Treated for Cancer With Arsenical Paste. Douglass W. Montgomery.
119 Pernicious Anemia. E. E. Kelly.

Texas Medical Journal (Austin), January.

120 Some Advances Made in Our Knowledge of Immunity and Protective Inoculation. Henry W. Harper.

Texas Medical News (Austin), January.

121 Double Hare-lip Complicated With Projections of the Intermaxillary Bone, Blandin--Roses' Operation. Report of a Case. Joe S. Wooten.
122 Cocain Anesthesia by Lumbar Puncture. William Keiller.
123 Six Weeks With English Surgeons. R. H. T. Mann.
124 The Cause and Prevention of Malarial Infection. R. W. Knox.
125 Malarial Hematuria. Walter T. Brown.

American X-Ray Journal (St. Louis, Mo.), February.

126 The Development of the X-ray Plate. J. N. Scott.
127 *A Review of Cases of X-ray "Burns." E. A. Florentine.
128 Gall-stones Under the X-ray. J. Rudis-Jicinsky.
129 Case of Tissue Injury by X-ray and Result of Prosecution in Court. L. A. Perce.

Georgia Journal of Medicine and Surgery (Savannah), January.

130 A Critical Survey as to the Etiology and Transmission of Malarial Fevers Through Infection by Mosquitoes. Edward N. Liell.
131 *Malaria—Its Etiology, Symptoms and Diagnosis. H. Stuart MacClean.
132 Etiology and Diagnosis of Malaria. Albert Woldert.

International Journal of Surgery (N. Y.), February.

133 Brief Consideration of the Etiology of Malignant Growths. R. H. Cowan.
134 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
135 Treatment of Fractured Patella by Operative Measures. F. H. McNaught.
136 Regional Minor Surgery. (Continued.) George G. Van Schaick.
137 Practical Suggestions Upon the Treatment of Rectal Diseases. James P. Tuttle.
138 The Technique of Surgical Gynecology. (Continued.) Augustin H. Goelet.
139 Three Laparotomies for Penetrating Wounds of the Abdomen. E. W. Walker.
140 Some Remarks on Tetanus. J. J. Thomas.

AMERICAN.

3. **Infantile Scurvy.**—The etiology of scurvy in infants has been studied by Griffith, who reviews the statistics and also reports a number of personally observed cases. The points of interest to which he calls attention are: that there is a generally accepted view that patented foods often produce infantile scurvy and some cases show that recovery may follow their withdrawal without other treatment. Whether this is because they are deficient in certain ingredients or whether they commonly contain or are derived from starch, remains to be determined. The cases also indicate that the sterilization of milk is capable of producing scurvy though this is a less prominent etiologic factor. It is shown that scurvy can develop on a diet of milk, which has not been long heated or which is even raw, and in which case we are lead to suspect the action of a low percentage of proteids. Some of the cases also show that fruit juices may produce a cure without any change in the diet. In conclusion he remarks that while there are dietetic factors, the individual element is markedly present in this disease: what is one baby's meat is another's poison.

6. **Chloretone.**—Stevens gives his experience with this drug and concludes that we have in it a special hypnotic of moderate power, rarely giving rise to unpleasant after-effects, but of which a tolerance is quite readily acquired, and it should be adopted for use in cases of insomnia, unattended with pain, high fever, or pronounced nervous excitement.

7. **Sputum Examinations.**—Fussell insists on the necessity and value of sputum examinations, describes the technique, and discusses their practicability for the average practitioner. To show their value three cases are reported. He maintains that it is perfectly practicable for any physician possessing a microscope with a moderately high power, or with an oil-immersion lens, to make the examinations himself, and describes the simpler procedure.

8. **Rectal Resection Per Vaginam.**—Murphy describes and illustrates his method of excision of the rectum through the vagina, and reports five cases. His conclusions are that the advantages offered by this route are: 1. The sacrum and posterior bony wall of the pelvis are not disturbed. 2. The field of operation is as extensive and the anatomical parts as accessible as in any transsacral operation. 3. The peritoneal cavity is opened in both the vaginal and sacral operation, and in neither is it a source of great danger. 4. The diseased tissue is more accessible for inspection and the extent to which the operation may be carried upward is as great, if not greater, than by the sacral route. 5. The peritoneum may be drained freely through the vagina. 6. A perfect end-to-end approximation either by sutures or with the use of a button may be secured. The preferable method is by interrupted silk suture because, as there is no peritoneum on the sphincteric segment, failure of union with the button is to be feared. 7. The sphincter is retained and the peritoneal body is restored. There is a diminished action of the levator ani muscle. 8. When operation is complete, the parts are practically in their normal position. He remarks that he has performed the same operation on male cadavers and found, by splitting the sphincter directly through the median line anteriorly and posteriorly cutting back to the coccyx and opening the retrovesical fold of the peritoneum, practically the same field for operation may be opened as in the female, several inches of bowel be dissected and end-to-end union secured. Either anteproctеal or postproctеal drainage may be used. The cut ends of the sphincter are united anteriorly and posteriorly and the lateral nerve-supply on the other side is not disturbed.

12. **Army Pathologic Laboratories in the Philippines.**—The army pathologic laboratories on hospital ships and at Manila are described by Curry, who gives general remarks on the diseases of the Philippine Islands. He speaks of the special embarrassments in such laboratories in the tropics, on account of the frequent contamination by air organisms and the rapid putrefaction processes in cadavers. The bacterial flora of the tropics is, he says, as rich and varied as its botanical flora, and a great many organisms are met with that were hitherto unknown. As regards the climate, he thinks the Philippines are not specially unhealthy for a tropical region.

13. **Dysenteric Diseases in the Philippines.**—Out of over 20,000 cases treated at the First Reserve Military Hospital at Manila, there were 1999 cases submitted for dysentery and 2186 for diarrhea, a total of 4185 or over 21 per cent. of the total. About one-half of the cases of diarrhea were probably dysenteric, making a total of 3000 cases, of 15 per cent. of total admissions. Dysentery is responsible for the highest mortality among the troops and is, moreover, a persistent disease occurring repeatedly after the first attack. It is generally traced to impure drinking water. Of the coincident affections he mentions malaria, and also typhoid fever, pneumonia and tuberculosis which appear in a small percentage. The amebic type of dysentery is the predominating one, occurring in a little over 60 per cent. of the cases of those that come to autopsy, and is responsible for more deaths than all the other types combined. Abscess of the liver has been found in about 16 per cent. and general peritonitis in about 25 per cent. due to perforation of ulcer or rupture of the abscess. In addition to this there was general peritonitis in one case, without perforation of the bowel, the infection passing through the thin base of the ulcer in the cecum. In all cases of abscess active ameba were demonstrated both in the abscess contents and the contents of the large intestine. The question as to whether the ameba is of primary or secondary origin is discussed, and the author favors the view that it is the principal causative agent in at least one type of the disease. In several cases the bacillus of Shiga and Flexner has been found in cultures. He has not had much experience with the antidysenteric serum of Kitasato, though its results are in Japan believed to be of value. He recognizes two distinct types in the Philippines, the amebic dysentery and the acute dysentery, in a number of which the Shiga bacillus was found. In addition to this there were cases of subacute and chronic dysentery in which neither the amebæ nor bacilli occurred.

14. **Uterine Fibroids.**—Gage reports a method which he has followed in 50 cases. He has resorted to dilatation, and

curettement in 5, with other measures to some extent, and he has operated by morcellation for submucous fibroids projecting into the uterus in 15 cases, and while he has had no deaths he has had serious septic complications in several. In 3 cases he has removed the tubes and ovaries with good results. In 2 he removed the uterus by the vaginal route, one following an unsuccessful curettement and the other for supposed carcinomatous degeneration. He would not choose the method for this purpose, but it is applicable for the removal only of small tumors and is not so satisfactory as the operation from above. He has performed abdominal hysterectomy 25 times with 3 deaths; two of them he thinks were due to defects of technique, in lack of knowledge of any other source. His method of operating is to cut the broad ligament between two clamps down to the attachment of the round ligament, divide the peritoneum through the uterus from side to side at this level and strip it back keeping close to the uterus until he can feel the uterine arteries between the peritoneal folds, secure with silk ligatures and then amputate the cervix. He cauterizes the divided uterine canal, securing the ovarian arteries and vessels of the round ligaments and finally uniting the anterior and posterior layers of the peritoneum by continued sutures from one side of the pelvis to the other. The most important steps are, he thinks, the absolute control of all hemorrhage about the stump so that there should be no accumulation of clotted blood from the space between the stump and its new peritoneal covering and the treatment of the uterine canal. During the past he has tried, whenever possible, to leave at least one ovary, but confesses failing to observe any special advantage in the results. The operation with its progressively diminishing mortality and completeness is almost ideal when performed for the relief of symptoms definitely known to be due to fibroid. It would be ideal, but for the fact that it unsexes the patient, and this makes it objectionable in young women. As regards myomectomy, the only great danger is from hemorrhage and the supposed difficulty of controlling bleeding from torn uterine muscles, simply a lack of technique, and every year is bringing additional testimony to the unsoundness of this objection. He performed myomectomy only six times, but with the very best results. It is especially applicable in cases of young women after it is made clear that the fibroid is steadily growing.

15. **Dysbasia Intermittens.**——This condition, which consists in intermittent lameness following exercise, is described by Putnam, who reports a case. and confesses to feeling a little doubt as to the correctness of the generalization of Erb and Charcot that the condition is due to the fact that when the muscles are in use a very unusual supply of blood is needed, which can not be supplied on account of arterial defects, or that vascular cramp is induced. In his case a careful examination of the patient's arterial circulation in the involved foot was made before the treatment was begun, and afterward, and no special change of conditions noted. He is inclined to think that perhaps vascular spasm is the best explanation. The treatment employed by him was galvanism followed by faradism following the indications laid down by Erb. After the bath treatment had been abandoned, the patients undertook to give himself a kneading and massage of the calves of the legs, and improved. Possibly the influence of warm weather had something to do with the improvement.

16. **Causes of Infectious Diseases.**—Doty pleads for more careful research into the origin of any case of infection, and, if well marked cases can not be found, says we should look for mild or convalescent ones. The physicians should be more careful to disinfect everything that the patient had used or had. He is satisfied that the clothing of well persons and cargoes of ships are rarely the means of transmitting disease, but the danger from mild, ambulant and convalescent cases which pass unnoticed should be recognized.

17. **Floating Kidney.**—Morris describes the operation performed by him for the last two years, for which he does not claim anything excepting that it seems rational and has been up to the present time the most desirable in its results in his hands. In this operation a flap of capsule including the larger part of the mesial surface of the kidney is incised with a scalpel and the flap of capsule then stripped up from the parenchyma but remaining attached at the convex border of the kidney. The flap of capsule is drawn through a slit in the psoas muscle or in the quadratus muscle, as one chooses, and is there sutured in place. This brings bare parenchyma also in contact with the psoas or quadratus fascia, where it forms a firm connective tissue attachment. The operation avoids the necessity for passing the suture through the parenchyma of the kidney and he has had no reports of the recurrence of the difficulty in his cases up to the present time. In his general remarks on floating kidney he maintains that this condition is so common that probably every practitioner has a number of patients under his care suffering from this cause. The reason it is not more often clearly recognized at the autopsy is that the organ returns to its place and becomes fixed there by rigor mortis. In some instances the condition gives no trouble, in others there are distressing complications; in others still those of general enteroptosis. Cases for operation, according to his view, are those which continue to produce important symptoms after the diagnosis has been well made and abdominal support and general medical treatment tried without effect. The method of examination practiced by him is that prescribed by Israel. A line is drawn parallel to the middle line of the abdomen, distant from the middle line of the abdomen as far as the point in the middle of Poupart's ligament and extending to the costal border. In examining the right kidney the fingers of the right hand are placed on the upper extremity of this line, the left hand at the same time lifts the quadratus lumborum muscle. The fingers of the right hand are depressed more and more with each expiration of the patient until the lower pole of the kidney can be felt or at least approximated. The patient is then asked to take a deep inspiration, when the kidney, if loose will slip out beneath the examiner's fingers very distinctly and can often be carried to a point below the navel. The loose kidney commonly falls into its normal position with the patient in a recumbent position, but often is discovered at some other point in its line of excursion.

18. **Scarlet Fever.**—The subject of convulsions with scarlet fever is discussed in connection with a case which is elaborately reported by Hayd. He summarizes his deductions from this case, in substance as follows: 1. Every case of scarlet fever is a law unto itself. 2. Convulsions may and do occur when least suspected. 3. The urine should be frequently examined, not only as to specific gravity and albumin, but urea calculations should be often made. 4. Mere specific gravity is not a sufficient indication as to the amount of urea eliminated, as yet it may be retained in poisonous quantities; moreover, a large quantity of water may be voided with fair specific gravity and yet convulsions occur. 5. Albumin need not be present, or only a trace can be found, and yet convulsion occurs, but it will be found perhaps in great amounts following it. 6. Only the most digestible food and nourishment should be given, if possible such as produces little gastric and intestinal putrefaction, the best being milk, because the amount of toxalbumins and putrefactive residue is reduced to a minimum. 7. If milk can not be digested or will not be taken, no food should be administered for days by the stomach, but the patient be allowed an abundance of water and nourishment by nutrient enemata. If broths are borne, chicken broth made according to the directions of Dr. Pryor of New York, as found in his book, is a pleasant and nutritious food. 8. In any severe case of convulsion only a small amount of food by the stomach should be given at any one time, and frequent urea calculation should be made to see that the proper quantity of urea is eliminated, and if it is not increased after the ingestion of food, the food must be withheld or such be substituted as will not interfere with urea excretion. 9. If gastric irritability exists, give the stomach and bowels, rest, which also rests the kidneys and permits them to rehabilitate themselves either in function or to develop new renal secreting cells. Scarlatinal nephritis is a desquamative process and epithelial cells are no doubt often quickly formed. 10. The amount of urea passed in twenty-four hours differs in different individuals ,and it may be

roughly stated that an excretion of 10 gms., or 150 gr. of urea for a child 10 years old, weighing 60 pounds, will protect her from convulsions. His patient is passing over 500 gr. every twenty-four hours. 11. Hypodermoclysis is a very valuable and safe method to introduce water into the system, and, with the proper precautions, as much as two or three pints may be used without danger of severe abscess formation. Decinormal salt solution should be used, first boiled, and the skin be thoroughly disinfected by washing with soap and brush, and again with a bichlorid solution—1 to 2000—and subsequently with alcohol. The needle and fountain syringe, with tubes, should be placed in boiling water and boiled for a few minutes to ensure perfect cleanliness. 12. Enteroclysis or the introduction into the bowels of a number of quarts or even gallons of water, with a temperature ranging from tepid water to 80 degrees, if much fever be present. should be employed once or twice during the twenty-four hours. 13. Strychnin and digitalin are the most valuable heart stimulants and brandy the best food and diffusible stimulant.

19. **X-Ray Diagnosis.**—The correct mechanical principles employed in securing the data on which the diagnosis of the Roentgen method is based, insures, according to Leonard, absolute results when the technique of its employment is correctly understood and the data obtained by its use rightly interpreted. The advantages of the method are not only the recognition of the disease known to be existing, but multiple fractures are often shown where only one was suspected. The exact line of fracture is determined and more correct information is obtained without manipulation, saving the patient unnecessary pain and causing no further traumatism to the tissues. This increased facility in diagnosis is not the limit of its usefulness, however, the accuracy of setting and efficiency of fixation apparatus or other methods of treatment can be demonstrated and the necessity of otherwise operative interference can be diminished. The Roentgen method has created a higher standard by which the treatment of fractures may be judged and practitioners can not be said to have employed all the means and knowledge without the use of the *x*-ray. The skiagraph has been admitted as evidence and suits for damages will undoubtedly be based upon its evidence. The safety of practitioners lies in its employment to prove that reduction and fixation have been accomplished or, if not, proof that he suggested it to the patient and was refused its employment. It can never, however, form a basis on which the amount of damages is assessed, which will depend on functional disability and loss which the patient has sustained. Whenever the skiagraph is introduced as evidence the defendant should demand the privilege of having a similar examination and should employ expert testimony to fully explain its meaning to the jury. One great advantage of the method is the possibility of establishing an absolutely negative diagnosis, which is valuable in many cases.

20. **Adenoids.**—The mischief due to adenoids consists, according to Woodward: 1, in the excitation of aural disease; 2, their effects on the patient's general health. He reviews the symptoms dependent on the condition, their development, and the accessory symptoms, including in the latter chorea, epileptiform attacks, and deafmutism. As regards treatment, he thinks we should not wait for the retrogressive hyperplasia which occurs during adolescence, because, prior to this, serious damage may be done. The operation, he claims, is not necessarily dangerous, and while hemorrhage is profuse it ceases spontaneously. Anesthesia is, he thinks, the greatest danger, and he avoids the use of it when he can. The only aftertreatment required is cleanliness of the wound, cod-liver oil, iron and fresh air. He also remarks on the condition of hypertrophy of the faucial tonsils and operates for their removal. Up to the present time he has not seen a patient in whom tonsillotomy had been done who had not derived some benefit from the operation.

25. **Carcinoma from Senile Warts.**—Broome reports two cases of carcinoma developing from senile warts, one of which was treated by local measures which seemed to be so effective that he concluded the carcinoma was practically destroyed and closed the breach made by the carcinoma, by plastic operation. Union took place by first intention. The cosmetic effects were entirely satisfactory and there is no evidence of return, though only three months has elapsed. He discusses the etiology of these malignant growths, and suggests the probability of the parasitic nature of the growth.

26. **Suprapubic Cystotomy.**—After giving the history of the operation, Carpenter reports several cases and remarks in regard to the method. He says, bend, do not tie down the penis when the bladder is distended. Cut down, not up, in opening the bladder in suprapubic cystotomy. Feel for the knot of the urachus, and cut below toward the neck. The peritoneum does not extend below this point. The danger of over-distending the ulcerated, attenuated, sacculated bladder is mentioned and, if necessary, he advises to cut open the peritoneum, having the incision repaired after the pathologic condition has been removed. The operation should be done to remove calculi, foreign bodies, tumors, for stabs, gunshot wounds, rupture of bladder, drainage in the bladder, the passage of urine in stricture, etc. In stone cases the operation of election is Bigelow's, but the stone may be too hard to crush. For polypus, papilloma, removing hypertrophied lobes of prostate, foreign bodies, etc., for cure of peritoneal fistula, which can not be otherwise cured, the suprapubic is the best and most successful method. One must not forget to keep in the mesial line and avoid veins in the prevesical space. It may be necessary to divide, transversely, the thick fascia forming the linea alba close to the symphysis pubis, also to divide the recti muscles transversely if the resistance is so great as to interfere with the rest of the operation. The bladder, after having been opened, is held by fixation forceps, or sutured to the wound, as deemed best; one or two fingers in the rectum to open the posterior wall may be necessary. Hot water is the best agent in bladder surgery. When the bladder is healthy and the wound aseptic the bladder wall may be sutured and get preliminary union, but if it is diseased or engorged no attempt should be made to suture it. Drainage should be used if the case demands, and the patient kept scrupulously clean.

29. **Renal and Vesical Calculi.**—Harrison remarks that it would be interesting to know if observations have been made as to whether the color of the urinary calculus apart from its chemical compositon exercises any influence on the shadow cast by the *x*-ray. It has occurred to him that if such were the case, it would be possible to bring this about artificially. In a recorded case he found that a white phosphatic stone was deeply stained blue by the patients having been treated previously with a course of methylene blue for cystitis, and he has seen other similar cases since and wondered whether different degrees of intensity in the radiograph of oxalate of lime calculi were explainable in this way. He suggests this as a practical point. The stone detected by radiography may permit of a delay in operating, without detriment, which is an advantage.

35.—This article also appears elsewhere. See ¶26, above.

47. **Autopsychorhythmia.**—This is the name given by Hughes to a symptom of repetition of certain words and phrases, a sort of repetition psychoneurosis. He refers to a number of cases and compares it with the echolalia and other symptoms. The form of insanity toward which this condition tends is, in his opinion, that in which imperative conceptions predominate or have predominated in the initial stage. Its pathologic lesion is evidently in the mind area of the brain cortex, not *focalized exclusively in the* speech area. 'It is a psychic and not a purely psychomotor involvement.

49. **Malthusianism.**—Alexander discusses Malthusianism and its influence on civilization, maintaining that, on the whole, it has been a decidedly potent factor in the advancement of the race, notwithstanding the fact that Malthus underestimated the increase of subsistence resultant on the ultilization of waste and over-estimated the human rate of increase.

37. **Chromic Acid.**—Shaw reports a case in which chromic acid was used for condylomata of the genitals, and produced decided toxic symptoms, nausea, rapid pulse, cold extremities, perspiration, etc. The dressings were immediately removed, but the conditions continued for thirty-six hours and then the patient gradually returned to her normal state. He finds little literature on the subject in text-books, though a similar case with more disastrous results was reported a few years ago by Dr. J. Wm. White, the strength of the solution in both cases being the same, 100 gr. to the ounce.

52.—See abstract in The Journal of January 12, p. 126.

53.—Ibid.

54.—Ibid.

55.—Ibid.

56.—Ibid., p. 127.

57.—Ibid., p. 126.

58.—**Colostomy**—Finlayson argues for the benefits of colostomy, maintaining that it should never be performed without fully informing the patient as to the consequences, but also holding that it will relieve the conditions in hopeless cases, make life comfortable and even prolong it. In many non-malignant cases it may often make life endurable and cause little inconvenience or embarrassment. He favors the operation on the left side. The special point is that the diagnosis and prognosis must point unerringly to its necessity, and it should be performed as low down as possible so that the nutritive processes may be nearly completed. The technique of the operation is not described.

65. **Electricity in Genito-Urinary Disease.**—The disorders in which Walling thinks electricity valuable are impotence, catarrhal condition of Cowper's glands, spermatorrhea, enlarged prostate, varicocele, hydrocele, stricture, gonorrhea and syphilis. In cases of sexual weakness anesthetic areas receive the cathode and all irritable portions the anode whether the current be galvanic or faradic. Sittings may ge given of fifteen minutes three times a week. In enlarged prostate he uses potassium iodid solution directly to the gland by the cathode. to produce cataphoresis. In hydrocele he claims electrolysis presents a perfectly satisfactory method of treatment. The technique of the different methods is given in detail.

76. **Arthritis Deformans in Infancy.**—Moncorvo reports a case of a child 5 months old showing this condition, and notices the literature. He thinks there is no doubt as to the influence of heredity and rather favors the microbean theory of the condition. The symptoms are noted. The affected joints are mostly symmetrical and painful; acute and subacute conditions become attenuated and are followed by articular lesions which have a slow course or remain stationary. There is more or less marked anemia and he has also found a sensible diminution of hematin, and reduction of hemoglobin which, according to Bannantyne, reveals the action of the toxins developed by the bacilli. Symmetrical invasion of joints makes a clear distinction from gout. In infantile polyarthritis the general character is benign and a happy termination is the rule, though in some cases it may last into adult life or old age. As regards treatment, iodotherapy and electrotherapy are the surest means to combat infantile polyarthritis deformans.

78. **Influenza.**—Barnes compares the epidemic in St. Louis, in 1899 and 1900, with that of the present winter, which last he considers is causing more painful symptoms and more general complications. The most usual symptoms are general malaise, stabbing sensation in the region of the tonsils, with aching bones, and frontal headache. The other symptoms that may occur are in some cases complete aphonia, present for several days, cough, hoarseness, frequently pain in the chest and abdominal muscles, and the tongue is white but not furred, the breath very offensive, but the marked odor of the body noted in the epidemic in the preceding winter is not present. The bowels in most cases are normal; the urine dark, fever slight, cervical glands not enlarged, ear symptoms in some cases quite severe, though not so general as last winter. The treatment is largely symptomatic: quinin in small doses, with kryofin to relieve the pain, heroin for the cough, in 1/12 gr. doses every three hours, with ammonia chlorid and pilocarpin. The usual cough remedies do not seem to be effective. Local treatment is of great value. As to prevention, he advises the patient to remain indoors after dark, eat wholesome digestible food and dress properly, keep the bowels open, use but little liquor, and to secure plenty of rest and fresh air.

87. **Hysterectomy.**—Robinson reports the method he follows after performing vaginal hysterectomy, which he thinks has its advantages, leaving the oviducts and ligaments *in situ* and the utero-ovarian vascular circle intact. The patients make excellent and painless recoveries. The operation is performed as follows: The cervix is seized by traction forceps and a circular incision through the vagina is made about the neck, after which the anterior and posterior uterine surfaces are freed, and the oviducts, ovaries and broad ligaments also freed from the abdomen if necessary. Then, with a strong pair of scissors, the uterus is split from the cervix to the fundus about one-half inch from the lateral uterine border toward the median line on each side. The external uterine tissues of the lateral segments thus left *in situ* are closed by bringing together the cut peritoneal edges with sutures about a half inch apart. These four or five sutures applied to the lateral uterine segment readily control the slight hemorrhage from the lateral arteries of the utero-ovarian vascular circle. The sutures are subsequently removed. The operation, therefore, consists in the removal of about three-quarters, or two-thirds of the median portion of the uterus, including its cavity, leaving only one-eighth or one-fourth of the lateral border *in situ* on each side. The closer the myometrium is cut away from the endometrium the more and more is its hemorrhage of a capillary nature and more easy to control. The operation saves all the internal genital organs intact, excepting the central portion of the uterus, and by using silver wire for sutures may be done almost without pain or suppuration.

89. **Pruritus Ani.**—Duncan remarks in regard to this condition: that the cause, whatever it may be, whether chronic eczema, herpes, constipation, diabetes, worms, over-mental strain and worry which is a frequent cause, may have to all be looked after to relieve the symptom, and he mentions amongst the direct remedies to be used, local applications of hot water, carbolic acid, lotions, and one that he has never seen mentioned elsewhere, collodion. He says: separate as widely as possible the folds of the skin and mucous membrane and then apply common collodion freely. This will relieve, for a time, all the itching.

91. **Mistakes of the Physician.**—The mistakes here noted by Moots are those made by many of us in adopting the profession, mistakes in regard to personal disposition, pessimism, etc., and he thinks, too, about one-half of the physicians pay too little attention to their dress and toilet and to the condition of their offices. Too many are practically loafers, many are too hasty, and many violate good principles in obstetrics by too early resource to instruments. Other errors are lack of care in examinations, and especially the lack of business methods. Physicians should be charitable and have a brotherly feeling toward other physicians.

93. **The Doctor.**—Kimmell's paper, like the one preceding tells what the doctor should do. He should have sufficient mental caliber in the first place, and should be a more broadly educated man, should be industrious, cheerful, and of high principles.

95.—See abstract in The Journal of January 5, p. 57.

105. **Morphinomania.**—Ahlborn reports a case in which he treated the morphin habit by giving heroin, as it occurred to him that as a morphin derivative with a sedative and stimulating action, it might be of some use. The patient being accustomed to the hypodermic method of using morphin, he put him on hydrochlorid of heroin, giving it in the form of 1/12 gr. tablets, allowing one of these for each ½ gr. of morphin he had been in the habit of taking. As he was consuming about

12 gr. of morphin a day, this allowed him 2 gr. of heroin every twenty-four hours. Strychnin was also kept up and the patient treated for the relief of an existing urinary trouble. The patient declared that he did not need morphin under this treatment; he slept better, and it was continued for about a month, when no craving for the drug being manifested, it was decided to cut down the dose gradually and it was reduced one-half without producing any unfortunate symptoms. The patient had recovered his spirits and had no drug craving whatever. One month later the amount was reduced to about .25 gr. a day, and, in the course of two weeks it was entirely withdrawn, the tonic treatment being pushed. It is now more than seven months since the patient was discharged and he has not returned to his old ways. The second and third cases were treated in the same way. The author claims that in these cases at least it has been a very valuable drug. He claims that the cases cited show that heroin will take the place of morphin without injurious effects, satisfies the craving and allows the withdrawal of the drug without the bad effects commonly observed.

117. **Ligation of Ureter.**—Kibbe reviews the opinions of authorities in regard to ligation of one ureter, and finds that two general propositions may be deduced: 1. That life is possible in man after ligation of one ureter. 2. Given a local disease of the distal portion of the ureter of considerable extent, without infection in it or the kidney on the other side, where anastomosis is impossible, simple ligation rather than the severer operation of nephrectomy would seem worthy of consideration.

127. **X-Ray Burns.**—Florentine reviews the question of *x*-ray burns and the precautions which have been recommended. The grounded screen is, he thinks, more or less effective, though not absolutely so, and he suggests the possibility of individual idiosyncrasy as affecting the incidence of these accidents. He suggests that there is no known means of absolute protection, but he gives a list of those which have shown a tendency to help the situation: 1. Short exposures, which are perfectly satisfactory with our present approved apparatus and materially reduce the danger. 2. Distance between the active tube and part to be exposed; at least eight inches with the improved apparatus is equally effective and adds sharpness and detail to the negative. 3. Always avoid exposing the part frequently unless the rays are used for their therapeutic results, then the tube should be regulated according to the best knowledge of the effect to be produced. 4. Where much density is to be overcome and exposure necessarily long, use the protective screen impervious to the dangerous rays. 5. The vacuum should be as high as required to give the best results with the shortest exposure. He also claims that injuries were more frequent immediately following the earlier use of the *x*-ray than now, and by using the precautions mentioned and with our improved apparatus these may be almost entirely eliminated. It makes no difference whether a Ruhmkorff coil, a Tesla coil, or a static machine is used, their improper use invites danger. There is a needless alarm among the laity and we should deal with our patients honestly and wage an active war against fake institutions, and quacks and characters that swindle.

131.—*This article has appeared elsewhere. See* The Journal of February 9, title 30, p. 403.

FOREIGN.

British Medical Journal, February 16.

The Heart-Index Interval in Aortic Regurgitation. Paul M. Chapman.—The prolonged interval in aortic insufficiency has been studied by Chapman, who accounts for it by the slow propagation of the pulse wave in these cases. Increased arterial tension tends to obliterate this delay, while diminished arterial tension makes it more manifest. The hypertrophied heart also contracts more slowly, owing to the delay of propagation of the nervous impulses through the enlarged muscles; this he considers a new point noticed by himself. He discusses the question at length, giving evidences for these conclusions, and believes that they are firmly established.

Effects of Muscular Exertion, Sudden and Prolonged, in Young Adolescents. W. Collier.—In attempting to ascertain the effects of severe muscular exertion, we have, Collier remarks, to study first the physiologic changes set up by moderate exertion. The effects of exercise on the two most important organs, the heart and lungs, are first noticed. The first effect of exercise is to increase the force of the heart's beat and cause an active congestion, which swells the pulmonary capillaries and diminishes the air space. As the muscular effort continues, it increases the amount of CO_2 that is thrown into the blood, stimulating the respiratory center of the brain; inspiration becomes deeper and more frequent and more air is thrown into the air cells, impeding the circulation in the pulmonary capillaries, and the heart beats more and more quickly, but each ventricular systole is less vigorous and we have passive congestion of the lungs, which is a marked obstacle to the elimination of CO_2. This can not be done beyond a certain point, as too much CO_2 in the blood brings about the cessation of all effort. We have here, therefore, physiologic emphysema. In athletes who have been through years of athletic competitions, we often find the following signs of physiologic emphysema: 1. Absence of apex-beat either on inspection or palpation, while at rest. 2. Absence of all superficial cardiac dulness on account of the large emphysematous lung covering the heart and separating it from the thoracic wall. 3. A hyperresonant note above the clavicles and above the sternum. If the cause of this is repeated too often, or kept up too long, it is quite possible that it may become converted into a pathologic condition, leading in later life to the same consequences as we have from old-standing bronchitis and chronic asthma. Another effect is to throw a great strain on the right side of the heart, since passive pulmonary congestion implies overdistention of the right ventricle. The author calls attention to a form of heart strain not uncommon among girls and young women, who do much running up and down stairs. It is generally associated with a certain amount of anemia, and probably due to atonic conditions of the heart muscle induced by impoverished blood. The most prominent symptom is breathlessness on exertion and great frequency and tumultuous action of the heart. Girls about the ages of rapid growth with marked functional changes may have minor forms of dilatation of the right side of the heart, especially liable to occur with overexertion. The effect of severe muscular exertion on the left side of the heart is to produce a physiologic hypertrophy, and if this is overdone there is danger in it. Insomnia is not an uncommon troublesome symptom with this form of physiologic hypertrophy. Collier advises that boys in schools should be examined before being allowed to take part in athletic exercises, and especially in the adolescent periods and when they are growing rapidly. Cases of severe and sudden breakdown in well-fed boys and college students are rare. The danger lies in the future, some twenty years or more after. He notes the prophylaxis, advising physical examinations of school boys and students, but says that the danger is less in this class than with the lower middle classes outside of public schools. In concluding his paper he remarks on the physical standard of the army being too high. Many men are rejected on account of insufficient weight or chest measurement. A long, narrow chest may have equal lung capacity with the broad one, but the tape only measures the horizontal diameter; it takes no cognizance of the vertical. Intermittent albuminuria is mentioned, and Collier explains it on the ground of some defect in the walls of the blood-vessels of the kidney. The condition often gives rise to no special trouble, and the treatment for it seems to do very little good.

Cases of Adult General Paralysis with Congenital Syphilis. R. Percy Smith.—The possibility of general paralysis in adults being due to the same cause as when it occurs in young persons suffering from congenital syphilis is noticed by Smith, who reports two cases: 1. The full account of a patient of Dr. Mott's, mentioned by him in his Croonian lecture on degeneration of the neuron as possibly of this nature. 2. The other one was a personal observation of his own. In both cases they were women of 28 and 24 years respectively. There was no suspicion of acquired syphilis, but little doubt as to paternal. The paretic symptoms were characteristic.

Wind Exposure and Phthisis. Charles A. Davies.—The paper by Gordon, of Exeter, in which he attributed the great frequency of phthisis to wind exposure in certain English districts, is the text of Davies' article. He gives the facts as regards the Isle of Man, showing that the conditions there do not bear out Gordon's views. In fact, if the wind theory is true, the regions in that island which give the least rate of phthisis should give the highest, and he can not find anything that supports the theory that strong winds are accountable for the peculiar distribution of disease in the Isle of Man, whatever may be the cause elsewhere. Phthisis among women and children who shut themselves up in small cabins can not properly be attributed to wind exposure, though it is done to escape the inclemency of the winds; it is due to vitiated atmosphere.

Thyroid Extract as a Remedy, with Illustrative Cases. P. Blaikie Smith.—The author reports several cases where thyroid extract was used for conditions other than myxedema with remarkably favorable results. One was a case of extensive carcinoma, in which many of the nodules disappeared and there was a general temporary improvement. In other similar cases, however, the same treatment seemed to be ineffective. Another case was that of a child three years old, suffering from edema and bullæ, with constant relapses. The case proved refractory to all radical treatment, but thyroid extract in 1/3 gr. doses two or three times a day, given as a last resort, was extremely effective. The third case was one of obesity associated with Bright's disease, in which the effects were perhaps less unusual, but were very striking.

The Lancet, February 16.

Remarks on Agglutination by Plague Blood. E. Klein.—Various observers have noticed that the blood of persons convalescent from plague possesses the power of agglutinating plague bacilli in cultures. Klein has investigated the case and finds certain difficulties. In the first place good emulsion is hard to make. The plague bacilli are naturally aggregated in cultures and a uniform distribution of micobes is not as easy to bring about as with some other organisms. He tried to make a workable emulsion from gelatin surface cultures, by distributing the gelatin growth in physiologic salt solution, and he finally succeeded. The emulsion in bouillon, as generally used for other bacilli, is not applicable since it is not itself without effect in causing agglutination of plague bacilli. Experiments with the salt solution with the blood of rats that had been injected with Haffkine's prophylactic, and later with living plague cultures, showed a very marked agglutination in ten minutes, and control experiments with normal human blood and normal mouse's blood showed no such effects.

Deutsche Med. Wochenschrift (Leipsic), February 7 and 14.

Bacteriology of Articular Rheumatism. F. Meyer.—Two years of efforts to cultivate a micro-organism from the blood or joint effusion in cases of articular rheumatism resulted negatively. But when mucus taken from the tonsils was employed no difficulty was experienced in cultivating a peculiar, delicate streptococcus which induced a seropurulent, usually sterile, joint affection in animals, not leading to sepsis. The lesions showed a special affinity for the serous membranes and the endocardium.

Bactericidal Power of Electric Light. H. Strebel.—A series of tests and experiments is described which, the writer states, formed the first scientific demonstration that the bactericidal power of light is exclusively the property of the short-wave rays beyond the violet—the ultraviolet. He describes an improved technique for radiotherapy, enhancing the bactericidal power of the light by using, instead of the ordinary carbon arc-light, electrodes made of a combination of aluminum, cadmium, zinc and carbon, and cooling the compressorium with a stream of compressed air, determining the power of the light not by the visible appearance, but by its action on aristo paper.

February 14.

Operating in the First Moments of Ether Inhalation. P. Sudeck.—In about two hundred operations at Hamburg. the surgeon began his work after the first or second deep inhalation of ether by the patient, without waiting for absolute narcosis. It was found that complete unconsciousness accompanies the first inhalations, if the patient's attention is diverted from the operation, if the instruments are concealed, etc. Brief operations can thus be concluded with the minimum of ether, and before the patient reaches the stage of agitation. Kuemmell has thus amputated a leg or arm in feeble, elderly persons, with no intimation on their part that they experienced pain. Occasionally the patients say that they feel the surgeon's touch, but no pain. Harless is quoted as saying that the ether "may reach the brain through the lamina cribrosa at the first whiffs, as a brief anesthesia with unconsciousness is observed at this time, which is sufficient for a rapid operation." During the extirpation of glands in the axilla the raised abducted arm showed no voluntary nor reflex tendency to adduction, which testifies to the effectiveness of the insensibility induced by the first whiffs of ether.

Operative Treatment of Pulmonary Tuberculosis. H. Sarfert.—Experiences with 150 cadavers showed that the best route for surgical intervention on the lung is by resection of the second rib, detaching the pleura with the hand as one cuts the pages of a journal, freeing the lung without opening the pleura, and after locating the lesion by palpation, opening the cavity with the knife or thermo-cautery. No large vessels are encountered and the operation is remarkably simple. It is indicated in case of a single large cavity, with the remainder of the lungs and the large bronchi very little, if any, affected, and no other organs involved. Sarfert thus operated on a woman of 40 and found the conditions exactly as favorable as in the cadaver. Solid adhesions were found after resection of the second rib, and the loss of blood was remarkably slight, both in the wound in the blunt detached lung and in the newly formed layers of connective tissue on lung and pleura. The position and size of the cavity were readily ascertained and it was extensively opened. There was no asphyxia nor dyspnea. The large cavity communicated with a second smaller one: both were easily tamponed. The wide gap left between the apex of the lung and the thorax gradually closed by granulations. Neither the previous hectic fever nor hemoptysis recurred. The wound had closed in three months to a granulating strip 3cm. wide with a crater 3cm. deep. After two months of euphoria the patient succumbed to an attack of pneumonia in the lower lobe of the other lung. The autopsy showed that very few tubercular nodules were scattered over the lung that had been operated on; there were no evidences of the cavities. The apex had become transformed into tough connective tissue, but the remainder of the lung was air-tight.

Muenchener Med. Wochenschrift, January 29.

Clitoris Crises in Tabes. G. Koester.—A case of this rare complication of tabes, of which Pitres has published three cases, is described at length. The clitoris crises correspond to gastric crises and also to the genital disturbances in men during the course of the affection.

Influence of High Temperature on Milk. H. Conradi.—Heating milk above 80 C. produces a permanent chemical or physical change in its constitution beyond that usually recognized. The normal coagulating point of the milk by calcium and similar salts is diminished by 8 to 12 degrees, while the action of rennet is retarded.

Prophylaxis of Venereal Diseases Among Students. W. Scholtz.—The pamphlet warning against the dangers of venereal disease which is now distributed among the students of Germany when they enter the universities, has already commenced to bear fruit, as Scholtz is able to prove by statistics from the clinics, etc.

February 12.

Tendon Transplantation in Case of Paralytic Deformities. E. Kunik.—The remarkable benefits to be derived from this tendon transplantation in cases of old paralytic deformities are [illegible], who states that the number of actually hopeless cases is being gradually reduced. The tendons are lengthened, shortened or transplanted as indicated, but the operation is not undertaken so long as a trace of spontaneous improvement is apparent under massage, baths and electricity. When the condition has been stationary for six to twelve months or the deformity is rapidly increasing, the operation is indicated.

Treatment of Perineuritis of the Sacral Plexus. A. Guttenberg.—The prognosis of this affection is favorable even in elderly persons. General tonic treatment should be supplemented by local massage, the patient in the position allowing easiest access to the affected nerves. The massage should only last a few minutes and should be very gentle, stroking the thickened cords or nodules from the side toward the sacrum, slowly increasing the pressure. The limb is then repeatedly hyperflexed to stretch the sacral nerves and promote absorption. Neurasthenic conditions are benefited usually by wet cold packs, and gentle gymnastics and baths cure the muscular atrophy. In patients with a suspicion of thrombosis and in elderly persons digital massage is substituted by a rectal injection of a pint of tepid water retained for a few minutes, and repeated twice a day. By these means improvement is soon evident. The pains and other disturbances disappear and with them the anemia and concomitant symptoms of irritation of the nervous system. Five cases are described; pains, weakness, trembling of the lower limbs, accompanied by anemia and a palpable "Rosenkranz" swelling or general thickening of the nerve were the most prominent symptoms.

Wiener Klinische Rundschau, February 10.

Thickening of Peripheral Nerves from a Cold. H. Propper.—A case is described of palpable perineuritis in consequence of trauma and two others of peripheral neuritis due to rheumatic influences. In the latter the long saphenous nerve was palpably thickened. Reviewing similar cases in the literature, Propper asserts that peripheral neuritis from a primary cause—catching cold—is of frequent occurrence. The more exposed nerves, such as the facial, cervicobrachial, sciatic and crural nerves and the saphenous are especially sensitive. They are sometimes thickened to twice their normal size. These swellings of the nerves from rheumatic influences may be either unilateral or bilateral. In a few cases the tendon reflexes were exaggerated with these purely peripheral affections.

Wiener Klin. Wochenschrift, February 14.

Mechanical Treatment of Certain Varieties of Vertigo. V. Urbantschitsch.—The dizziness that occurs when one whirls the body on the vertical axis can be overcome by practice. In the same way one can become accustomed to the dizziness caused by swinging the head around, etc. For two years the writer has been applying this principle to the treatment of vertigo, with remarkable success. He describes two typical cases consecutive to an operation for the cure of caries of the temporal bone, in which the horizontal semicircular canal had probably been injured. In one the vertigo after ten weeks was still so intense that it was impossible for the patient to ascend stairs or to walk alone. Systematic exercises, swinging the head around, repeated several times a day, stopping when distinct dizziness appeared and waiting for it to subside improved the patient so much in two weeks that he was able to balance his one-wheeled, heavy scissors-grinding machine as before without trouble.

St. Petersburg Med. Wochenschrift, January 26.

Carcinoma Under Thirty-two. W. Vierhuff.—Five patients between 28 and 32 years of age have been in Vierhuff's charge during the last few years, all with carcinoma of the stomach or intestines. The first and most constant symptom was good appetite with repugnance to food. At every attempt to eat nausea and discomfort in the stomach were experienced. Weakness and emaciation were frequently noted before the gastric contents showed abnormal conditions. Intermittent fever was also observed, appearing with symptoms simulating malaria. Kusick and Treyman have each observed three cases of malignant neoplasms. In the latter's cases the age was between 26 and 29, and all were located at the portio. In spite of apparently favorable conditions the cases terminated fatally in one to nine months to two and one-half years. Three cases of carcinoma of the rectum in still younger girls were also rapidly fatal.

Vratch (St. Petersburg), XXI, 48, 51 and 52, 1900.

Massage-Plaster Open Splint for Fractures. Piletzky.—The plaster splint used by Piletzky for simple fractures is made of a bag of gauze filled with plaster mixed with carded flax. An opening is left over the region of the fracture and through it the spot is massaged, commencing the very first day. After eight to twelve days the splint is removed for massage of the entire limb and passive movements. At the end of two weeks active movements are commenced. The massage is done twice a day for ten to fifteen minutes. Nine cases are described, demonstrating the exceptionally rapid recovery, the patients walking in twelve to thirty-three days after fracture of a bone in the leg and in twenty to twenty-seven days after fracture of the femur.

Semana Medica (Buenos Ayres), December 20.

Sodium Hyposulphite in Bubonic Plague. J. Penna.—Six patients severely ill with bubonic plague were treated by subcutaneous injections, in the vicinity of the infarcts, of 1 gm. of sodium hyposulphite to the cubic centimeter, every three hours. The bubo became gangrenous in two cases, one of them fatal. The remainder recovered. Penna's previous experiences with this treatment in twenty cases were described in The Journal of January 19, p. 220.

Bulletin de l'Acad. de Med. (Paris), January 29 and February 5.

Sterilization of Cocain. Reclus.—One gram of cocain hydrochlorate in 100 grams of distilled water is distributed in small vials which are plugged with cotton and placed in a water-bath. The temperature is gradually raised to 100 C. and the boiling continued for half an hour. This method has proved more satisfactory than that of Tyndall's in three years' experience. The cocain remains intact and retains all its properties, the light-rotating power is not altered nor is the anesthetic action modified.

February 5.

Glycosuria and Diabetes of Dyspeptic Origin. A. Robin.—These conditions are frequently misunderstood and erroneously treated. Dyspeptic glycosuria is characterized by temporary, irregular, comparatively insignificant glycosuria during digestion only. It is frequently accompanied by transient albuminuria and always by an exaggeration of the general nutritive interchanges, nitrogenous and nervous. This glycosuria is noted in dyspeptics with a good or even an exaggerated appetite, with the stomach distended, with hyperchlorhydria, and the liver large and more or less tender. Accessory symptoms dependent on the primary cause are neurasthenia, vertigo, phosphatic, milky urine, dermatoses, cardiac phenomena and profuse sweats. It may develop into actual diabetes, but yields usually to suitable treatment of the hypersthenic dyspepsia. It is probably due to two causes: The exaggerated reflex excitation of the duodenum, etc., by the passage of a hyperacid chyme, stimulating the biliary function by reflex action, and the direct excitation of the liver cells by the elaborated or transformed glycogen. Dyspeptic glycosuria thus differs completely from the alimentary variety and from latent diabetes. It is the result of excitation while the others are the result of insufficiency. But the frequently repeated excitation may in time lead to genuine diabetes—that is, continuous excitation. Dyspepsia may be the prime cause in many cases of diabetes, and this explains the gravity of dyspepsia in a diabetic. The treatment is merely that of ordinary hypersthenic dyspepsia. In mild cases sedative medication is sufficient; in others, an exclusive milk diet may be required. If the glycosuria persists, the functional activity of the liver must be modified with antipyrin combined with sodium bicarbonate, or sodium arseniate and potassium arsenite, or lithium carbonate, codein, opium, belladonna, valerian, etc. One or two doses of 50 to 75 cg. of antipyrin combined with 50 cg. of sodium bicarbonate or the judicious use of sodium arseniate are usually sufficient. In case of dyspeptic diabetes or considerable glycosuria, the activity of the liver must be reduced at once, and the following three-day course of treatment instituted: First, the diabetic regime, suppressing all raw and acid foods. One and one-half hours before breakfast and dinner a powder of 50 cg. to 1 gm. of antipyrin and 50 to 75 cg. of sodium bicarbonate in seltzer water should be taken and during meals no beverage but Vichy water from the the Lardy spring. After meals one of twelve powders containing 4 gm. each of calcined magnesia and sodium bicarbonate mixed with 6 gm. of prepared chalk should be given. If gastric crises or pyrosis occur, or sensations of burning, constriction or dragging-down are felt in the epigastrium in the intervals between meals, one of ten powders should be taken containing 15 gm. of calcined magnesia, 7 gm. of bismuth subnitrate, 7 gm. of prepared chalk, 5 cg. of codein and 10 gm. of sodium bicarbonate. As soon as the sugar disappears from the urine, this medication can be suspended and treatment addressed solely to the hyperasthenic dyspepsia be inaugurated, commencing with a strict milk diet. If the sugar reappears in large amounts the antipyrin treatment must be resumed, but if it is minimal, 15 cg. of lithium carbonate are usually sufficient, taken before breakfast and at night, dissolved in a spoonful of water, to which is added a tablespoonful of a mixture of 5 cg. sodium arseniate in 300 gm. of distilled water. If the irritating action of the arsenic is feared, rectal injection of 5 c.c. of a mixture of 8 gm. of Fowler's solution in 92 gm. of distilled water may be substituted. In old-established cases the treatment of the diabetes and of the dyspepsia should alternate as the symptoms of each predominate. Starches and sugar should be avoided.

Bulletin de la Soc. des Hop. (Paris), January 24 and 31.

Cellular Elements in Pathologic Cerebrospinal Fluid.—Communications from Widal, Sicard, Monod and others announce that the cerebrospinal fluid contains cellular elements, lymphocytes predominating, in chronic affections in which the meninges are involved, and this is especially noticeable in tubercular meningitis, tabes, general paralysis and meningomyelitis. This symptom, indicating an alteration in the arachnopia mater, may in certain cases clear up the diagnosis between a central and a peripheral lesion, or confirm a dubious diagnosis of tabes or general paralysis. The cellular elements were not found in any of the cases of hemiplegia or peripheral neuritis examined, nor in alcoholics nor hysterics. In acute processes such as cerebrospinal meningitis, polynuclear elements predominated, indicating more extreme processes of defense. Lymphocytosis and the causal meningitis have been observed in 11 cases of general paralysis and 7 of tabes, none negative. Meningitis had been noted previously in 11 cases of paralysis and 9 of tabes, but the fluid was not examined.

Presse Medicale (Paris), February 2.

Hygiene of the Ear. LERMOYEZ.—Among the other measures recommended are mentholized olive-oil, 1 to 50, which is stated to be specific for coryza in children. It sterilizes and renders the nasal passages permeable, with no possible danger to the ear as from other substances. The child lies on his back and a few drops of the oil are instilled from a syringe or dropper three times a day. Intense nervous deafness may be caused by reflex action of worms in the intestines. The hearing is also liable to suffer, Lermoyez adds, from prolonged mental exertion in the quiet of the study. The ear hears, but it is the brain that listens, and if the latter is overworked, the hearing suffers.

To Banish the Bacilli from the Mouth and Throat After Diphtheria. MAETHER.—The conclusions of the writer's tests are that peroxid of hydrogen and ammonium carbonate are effective gargles for eradicating lurking bacilli after diphtheria. Ammonium carbonate has the advantage of dissolving the mucous secretions and thus allowing the disinfectant access to the bacteria. Maether recommends a combination of the two, gargling first with a 1 per cent. solution of ammonium carbonate and then with a 10 per cent. solution of commercial peroxid of hydrogen. If bacilli still lurk in the deep crevices of the tonsils, they must be mechanically dislodged with a fine sound.

Revue de Chirurgie (Paris), February.

Ligature of the Abdominal Aorta. P. TILLAUX AND P. RICHE.—The abdominal aorta has been ligated in thirteen cases, with a mortality of 100 per cent. according to the literature. Experiments in this line on animals were reported as early as 1667, and have been numerous during the last century. They prove that ligature of the abdominal aorta is not necessarily fatal, except perhaps in the rabbit. It is followed by anemia and paralysis in the hind legs, but not by gangrene nor permanent paraplegia. In man, the gravity of obliteration of the aorta varies with the cause and extent. It is unsuspected when congenital; but may prove rapidly fatal when of embolic origin. Consecutive gangrene and paralytic phenomena have been observed, the latter ranging from intermittent limping—claudication—to complete paraplegia. In every case of gangrene or persisting paralysis, the obliteration was not restricted to the aorta. In 11 of the 13 clinical cases the aorta was ligated on account of non-sacculated aneurysm, and twice on account of hemorrhage. In 7 the ligature was applied through peritoneum, in 6 by the retro-peritoneal route. Gangrene did not occur in any of the cases; the symptoms of cerebral congestion noted were rare and insignificant and the paralytic phenomena were inconstant, variable and transient. None of the deaths were directly attributable to the operation. Indications for ligature of the abdominal aorta are extremely rare, but study of the cases on record shows that the surgeon need not hesitate when he encounters the indications, as the obliteration of a sound aorta entails merely slight transient disturbances in the circulation, incapable of compromising the vitality of the lower limbs, and transient paraplegic disturbances. The details of all the cases are given, continued through several numbers of the *Revue*.

Study of Osteomalacia. G. GAYET AND L. M. BONNET.—The conclusions of this comprehensive study of osteomalacia are that the affection is due to a disturbance in the nutrition of the bones, consisting in an insufficient supply of lime salts and leading to the softening of the skeleton. This disturbance in nutrition may be local or general. Local osteomalacia is observed after traumatisms, infections of the bones and also in certain nervous affections. The lesions are of the same character in the local and in the general forms, but with variations not explainable by the apparent etiology, the clinical variety nor the extent of the generalization of the affection. There is nothing specific in the pathogenesis, but there are predisposing causes in age, sex, climate, etc. The actual determining cause is still obscure: but the facts that have been observed point to disturbances in the nervous system as the chief factor.

Protection of Raw Surfaces in Laparotomies. E. QUENU AND JUDET.—Since 1895, Quenu has made a practice of covering with serous membrane all the raw surfaces left after a laparotomy. By this means normal conditions are re-established and exudation is prevented. In case of vegetating cysts of the ovaries the entire pelvic cavity is made extraperitoneal by suturing the vesical peritoneum to the sigmoid loop and the peritoneum over the promontory. The method is particularly advantageous in case of salpingitis, supplemented by abdominal drainage if necessary. Traction on the organs brought together by the suture must be carefully avoided. The patients complain less of colic, and drainage can be discontinued in two to four days. Micturition and defecation have never been affected. Only 5 deaths have occurred in Quenu's last 129 operations for salpingitis, and they include one case of tubercular peritonitis, 3 from extension of the preceding pelvi-peritonitis, one from generalization of tubercular peritonitis and one from cachexia due to a renal complication. Tardy digestive disturbances and abdominal pains are less frequent than in the past, which testifies to more perfect intestinal functioning and the absence of adhesions. Post-operative occlusion of the intestines occurred in only one case, in which cure was easily effected by a secondary operation. The writer concludes that with peritonization recoveries are not only more frequent but they are more perfect and permanent.

Surgical Complications of Typhoid Fever. E. LOISON.—In the personal case described, the small intestine became perforated on the sixteenth day of typhoid fever, the patient being a young soldier. Loison operated fifteen hours later and the patient recovered. Keen's statistics gave the proportion of recoveries after surgical intervention on account of typhoid perforation as 19.3 per cent.; Platt, 20.3 per cent.; Mauger in 1900, 23.3 per cent., and Loison has now collected 16 successfully operated cases with 74 failures, a proportion of 21.6 per cent. The best results have been attained during the first twenty-four hours after perforation or commencement of the peritonitis, but the condition of the patient is the best guide. Subsidence of the primal peritoneal shock must be awaited. In the 16 successful cases, operation was made between the sixth and twelfth hour in 6; between the twelfth and twenty-fourth in 4, at the twenty-sixth in 1 and at the sixtieth hour in another. In Legueu's case a large perforation was found near the ileo-cecal valve. The tissues were too friable for suturing and the place was patched with a graft of omentum. The perforation occurred on the twentieth day and the operation was performed six hours later. The patient, a youth of 15, recovered with a stercoral fistula which healed spontaneously in three weeks. Loison prefers a median incision as more convenient for locating the perforation. If in the small intestine, it is usually near the ileo-cecal valve. Transverse suture is preferable to longitudinal, judging from the results published. If the intestine is very friable it can possibly be sutured to the abdominal wound. Total resection of the loop may sometimes be necessary, but the bad results after extensive resection discourage further attempts in this line. There are only five cases on record in which death occurred in consequence of new perforations after the operation.

Semaine Medicale (Paris), January 30.

The Adequate-Dosage Method Applied to Various Nervous Affections. Gilles de la Tourette.—The Journal described the details of this method of administering the bromids in epilepsy, Oct. 27, 1900, p. 1120. The results obtained with it have surpassed the most sanguine expectations and the principle is now being applied to other diseases. The method is based on the determination of the actual individual tolerance in each patient, by watching for certain physical signs and symptoms, peculiar to each drug, indicating the *approach* of intolerance. The individual adequate dose thus established is maintained for a length of time sufficient to completely abolish the cortico-motor hyperexcitability of the brain in epilepsy, and with it all tendency to seizures. The three-week period plan is followed, increasing by 1 gm. a week until the proper dose is ascertained, then maintaining it at this point in three-week periods, as for instance: 3, 4, 5; 3, 4, 5; 3, 4, 5 gm. and so on. It is then gradually diminished to final suppression. In this point there is a slight modification of the original method as first published. Other nervous diseases successfully treated in this way have been severe, associated forms of migraine, Menière's vertigo, grippal neuralgia and tic-douloureux. The results emphasize the exceptional benefits to be derived from this "proper-dose method." In a typical case of ophthalmoplegic migraine in a man of 35, for example, the paroxysms recurring frequently, sometimes every week and lasting three or four days, there has been no recurrence since a course of treatment last September. The adequate dose of bromid in this case was found to be 7, 8 and 9; 7, 8, and 9 gm., determined by the pupil sign and general manifestations at the close of the first third week. The complete course for this severe migraine requires about eight to twelve months. Quinin is the specific in Menière's disease.

Centralblatt f. Chirurgie (Leipsic), February 2 and 9.

Direct Suture of the Resected Ureter. A. V. Gubaroff. In an operation which required resection of 3 cm. of the ureter, the ends were sutured together at once, a small slit downward from the top in the peripheral end allowing it to be fitted over the central end. A stitch at the back and at each side held the parts in position and the slit was sutured as the final step. The patient died thirty-one days later from amyloid degeneration. The ureter was found practically normal with scarcely a trace of the defect and invagination. Absorbable suture material was used, and the stitches were taken lengthwise.

February 9.

Treatment of Injury of the Internal Soft Parts of the Knee. C. Lauenstein.—The writer has found that recovery was more prompt and satisfactory when the extravasated blood was evacuated by puncture, followed by immobilization of the joint for a few weeks. He has found it possible to determine the existence of rupture of the capsular ligament by inserting a bougie through the puncture-opening.

Muscular Transplantation for Contraction of Knee. C. Bruns.—In three cases of recurrent contraction of the knee after an old, healed infection, Bruns transplanted the tendon of the biceps into the tendon of the quadriceps. The results have been very satisfactory, the contraction and pain are completely abolished and the patients regain normal use of the limb. In one the contraction was consecutive to gonorrheal gonitis, the patient 24 years of age; in another to fungus of the knee in a boy, and in a third, a woman who had been confined to her bed for years on account of the extreme painful contraction of both knees from articular rheumatism. This patient has not been allowed to get up yet, but the knees are now normal.

Queries and Minor Notes.

PHYSICIANS AND THE AUTOMOBILE.

Lead, S. D., Feb. 22, 1901.

To the Editor:—In considering the purchase of an automobile, will you advise me which one or make is most practicable for a physician's use? Is an electric vehicle better than one of gasoline power? H. S. J.

Ans.—We are unable to advise our correspondent. While the electric automobile seems to us to be too limited in its radius of action for general country practice, it has many advocates, but the gasoline motor seems to be the most popular at the present time. The question of automobiles is an important one and The Journal will be glad to hear from its correspondents in regard to the matter, especially from those who have had experience in their use. Many are now using the automobile instead of the horse, and it would be interesting to those who are thinking of adopting this mode of conveyance if physicians now using them would give their experience for publication in these columns.

LABORATORY INOCULATION.

Iowa City, Iowa, Feb. 14, 1901.

To the Editor:—Will you inform me whether there have occurred, to your knowledge, any cases of accidental inoculation with diphtheria in the laboratory while working with cultures, and references? L. F. G.

Ans.—Yes, such accidents have occurred, and dangerous attacks of diphtheria have been the result. Fortunately they are rare and appear to depend on purely accidental conditions. We can not give definite references.

MALARIA DATA

Yoakum, Texas, Feb. 13, 1901.

To the Editor:—In The Journal of the 9th, I note reference to a paper by Wells on malaria, also by Edwards, Preble and Favill, and will be very much obliged if you will give me the name and address of the publishers of each of the papers. W. S.

Ans.—The articles were published in the *Chicago Medical Recorder* for January. Address Medical Recorder Publishing Co., Pullman Bldg., Chicago.

PRACTICE IN ILLINOIS.

Columbia, Mo., Feb. 18, 1901.

To the Editor:—What is the law governing practitioners in Illinois? If one holding a diploma has to go before the state board, give address of one of the members.

Ans.—This question was answered in The Journal of February 16, to which the correspondent is referred. The secretary of the State Board of Health is Dr. J. A. Egan, Springfield, Ill.

PRACTICE IN KENTUCKY.

Kansas City, Mo., Feb. 26, 1901.

To the Editor:—Kindly give the requirements of the State Board of Health of Kentucky regulating the practice of medicine in that state, also name and address of secretary of the board. R. J. S.

Ans.—A diploma from a reputable medical college, endorsed as such by the State Board of Health; registration with the county clerk after receiving certificates from the board is essential. Dr. J. N. McCormack, Bowling Green, Ky., is secretary of the State Board of Health.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

SYPHILIS OF CHILDREN IN EVERY-DAY PRACTICE. By George Carpenter M.D., Lond., Physician to the Evelina Hospital for Sick Children, London. Cloth. Pp. 110. Price, $1.25. New York: Wm. Wood & Co. 1901.

OBSTETRIC AND GYNECOLOGIC TEACHING. By Edward P. Davis, A.M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Illustrated. Pp. 402. Price, $1.75. Philadelphia and London: W. B. Saunders & Co. 1901.

AN INTRODUCTION TO PHYSIOLOGY. By William T. Porter, M.D., Associate Professor of Physiology in the Harvard Medical School. Cloth. Pp. 314. Price, $2.50. Cambridge, Mass.: The University Press. 1901.

THE HISTORY OF ANCIENT GYNECOLOGY. By W. J. Stewart McKay, M.D., M.Ch., B.Sc., Senior Surgeon to the Lewisham Hospital for Women and Children, Sydney. Cloth. Pp. 302. Price, $3.00. New York: Wm. Wood & Co. 1901.

TRANSACTIONS OF THE LUZERNE COUNTY MEDICAL SOCIETY For the Year Ending Dec. 31, 1900. Volume viii. Paper. Pp. 220 Wilkes-Barre, Pa.: E. B. Yordy Co. 1900.

INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures and [illegible] ticles on Medicine, Neurology, Surgery, [illegible] Pediatrics, Pathc [illegible] Dis- [illegible] Nose and Throat, [illegible] Interest to Students and Practitioners. By [illegible] the Medical Profession Throughout the World [illegible] W. Cattell, A.M., [illegible] B. Murphy, M.D., Chicago: Alexander D. [illegible] H. C. Wood, M.D., Philadelphia: T. [illegible] E. Landolt, M.D., Paris: Thomas G. M [illegible] Charles H. Reed, M.D., Philadelphia: [illegible] Harold, M.D., London. With Regular [illegible] London, Paris, Leipsic and Vienna. Vol [illegible] Cloth. Pp. 312. Price, $2.00. Philad [illegible] 1901.

THE RETROSPECT OF MEDICINE. A Half-Yearly Journal Containing a Retrospective View of Every Discovery and Practical Improvement in the Medical Sciences. Edited by James Braithwaite, M.D., Lond., Consulting Obstetric Physician and Surgeon to the Leeds General Infirmary, and E. F. Trevelyan, M.D., Lond., B.Sc., M.R.C.P., Assistant Physician to the Leeds General Infirmary. Volume 122. July-December, 1900. Issued January, 1901. Cloth. Pp. 442. Price, $1.50. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd. Edinburgh: [illegible] Dublin: Hodges, Figgis & Co., and Fannin & Co. [illegible]

A SYSTEM OF PRACTICAL THERAPEUTICS. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica [illegible] cond Edition, Re- [illegible] Therapeutic Con- [illegible] sures Other Than [illegible] and Diseases of [illegible] Price, $5.00 net. [illegible] 1901.

REPORT OF THE COMMITTEE ON THE PROTECTION OF NORTH AMERICAN BIRDS for the year 1900. By Witmer Stone: and Results of Special Protection to Gulls and Terns Obtained Through the Thayer Fund. By William Dutcher. Paper. Pp. 104. Extracted from "The Auk," January, 1901.

FIFTH REPORT OF THE COLORADO STATE BOARD OF HEALTH. Covering the Period from Nov. 15, 1894, to Nov. 15, 1900. G. E Tyler, M.D., Denver, Colo. Cloth. Pp. 223. Denver, Colo.: Smith-Br[illegible] 1900.

[illegible] Their Pathology and Treatment. By W. Ro[illegible] of the Royal College of Surgeons. Cloth Pp [illegible] et. New York: William Wood & Co. 1901.

THE JOHNS HOPKINS HOSPITAL REPORTS. Vol. viii. Paper. Pp. 397. Baltimore, Md.: The Johns Hopkins Press. 1900.

TRANSACTIONS OF THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION. Twenty-sixth Annual Session held at Asheville, N. C., Oct. 9, 10 and 11, 1900. Vol. ii. Cloth. Pp. 475. Printed for the Association. 1900.

DISEASES OF THE ANUS AND RECTUM. By D. H. Goodsall, F.R.C.S. (Eng.), Senior Surgeon (late house surgeon) to St. Mark's Hospital for Fistula and Other Diseases of the Rectum, and W. Ernest Miles, F.R.C.S. (Eng.), Surgeon (out-patients) to the Gordon Hospital for Diseases of the Rectum. In two Parts (illustrated). Part 1. Cloth. Pp. 311. Price, $2.50. London, New York and Bombay: Longmans, Green & Co. 1900.

FIFTH ANNUAL REPORT OF THE BOARD OF MANAGERS OF THE SPRINGFIELD STATE HOSPITAL OF THE STATE OF MARYLAND, Sykesville, Md. To His Excellency the Governor of Maryland. October 1, 1900. Paper. Pp. 38. Baltimore: Sun Book and Job Printing Office. 1901.

REPORT OF THE COMMISSION OF EDUCATION for the Year 1898-99. Vol. 2. Cloth. Pp. 1269. Washington: Government Printing Office. 1900.

New Patents.

Patents of February 5 and 12 of interest to physicians:

667,357. Massage device. August Andreae. Frankfort-on-the-Main, Germany.

667,358. Manufacturing acetic acid. Johann Behrens, Bremen, Germany.

667,182. Druggists' label case or cabinet. Wm. W. Billingslea, Macon, Ga.

667,487. Vaporizer. Frank P. Boland, Providence, R. I.

667,491. Atomizer. Oram H. Brigham, Chatsworth, Ill.

667,621. Obstetrical device. Hannah C. Fleming, Falls City, Neb.

667,518. Capsuling machine. Eli D. Harrington, Westfield, N. Y.

667,447. Bust developer. Harry L. Miller, Chicago, Ill.

667,260. Foot-rest for invalid-beds. Ellen F. Stetson, Boston, Mass.

667,469. Apparatus for perfuming or fumigating rooms. John W. Tighe, Exeter, England.

667,481. Respiratory mask or helmet. Charles H. Wood, Trenton, N. J.

34,024. Design; box for hypodermic needles. Fairleigh S. Dickinson, Bayonne, N. J.

34,042. Design; bed pan. Daniel Hogan, New York, N. Y.

667,759. Nitrocellulose, or similar substance, and making same. Da[illegible] ore, Md.

[illegible] ir. Charles F. Davidson, Canton, Ohio.

[illegible] ra De Puy, Warsaw, Ind.

[illegible] Samuel Guthrie, San Francisco, Cal.

[illegible] arles W. McDade, Faribault, Minn.

[illegible] and fumigating apparatus. John H. Se[illegible]

667,961. Medicinal vaporizer. Charles B. Tefft, Utica, N. Y.

34,057. Design; strand-supporting card for fumigators. John W. Castle, Leominster, Mass.

Copies of above patents may be obtained for 10 cents each by addressing John A. Saul, Solicitor of Patents, Fendall Building, Washington, D. C.

Change of Address.

J. P. Price, Medical College, Memphis, Tenn., to Westbrook, Ark.

Nina D. Polson, 676 Jackson Blvd., to 5429 Washington Ave., Chicago, Ill.

Frank Rattan, Antioch, Cal., to Martinez, Cal.

J. J. Ross, Louisville, Ky., to Meshack, Ky.

R. A. Stewart, Dorrance, Kan., to Idana, Kan.

J. E. Thompson, La Grande St., Pittston, Pa., to Taylor, Pa.

S. Tirman, 491 E. Houston St., New York City, to 522 S. 10th St., Richmond, Va.

C. L. Versea, 131 Howard, New Orleans, La., to Bryan, Tex.

H. C. Watkins, Aberdeen, Wash., to Cosmopolis, Wash.

J. S. Adams, 319 South 18th St., to 767 North 40th St., Philadelphia, Pa.

R. H. Anderson, 108 West 40th St., to 162 West 46th St., New York City.

H. J. Andrews, 901 South Cherry St., to 632 South College St., Nashville, Tenn.

M. R. Bailey, Philadelphia, Pa., to East Peoria, Ill.

M. J. Barlow, 509 Lee Ave., Nashville, Tenn., to Central Point, Ark.

N. P. Barnes, 138 6th St., N. E., to 212 Maryland Ave., N. E., Washington, D. C.

C. W. Bartlett, East Dorset, Vt., to North Bennington, Vt.

G. Blech, 103 State St., to 240 Blue Island Ave., Chicago, Ill.

H. H. Bridges, 1804 Conti St., New Orleans, La., to McNeill, Miss.

Marion Burke, 969 San Pasqual St., Pasadena, Cal., to Colorado Springs, Colo.

W. Cason, 131 Howard St., New Orleans, La., to 1300 Grammont St., Monroe, La.

F. E. Christopher, 1654 Gravier St., to 730 South Galvez St., New Orleans, La.

H. W. Clements, Hahira, Ga., to Lenox, Ga.

H. Cook, Pewamo, Mich., to Westphalia, Mich.

E. E. Cravens, Ellmott, Tex., to Licking, Mo.

J. R. Davis, 451 Pontiac St., Memphis, Tenn., to Dennis, Miss.

D. W. Detwiler, Moravia, Ia., to Oskaloosa, Ia.

G. F. Eames, 249 Newberry St., to 261 Beacon St., Boston, Mass.

J. C. Egelston, City Hospital, to 2425 Tracy Ave., Kansas City, Mo.

J. M. Evans, San Pedro de Ocampa, Mexico, to Corpus Christi, Tex.

Fry Walter, 2655 Bernard St., to 424 South Garrison Ave., St. Louis, Mo.

W. F. Gable, 627½ North High St., to 12 East Russell St., Columbus, Ohio.

J. J. Garver, Station A, North Pennsylvania St., Indianapolis, Ind.

E. F. Gough, Barnes Medical College, St. Louis, Mo., to Commerce, Tex.

R. Grace, 1750 Grace St., to Hotel Windemere, 56th and Cornell Ave., Chicago, Ill.

W. R. Granger, 2803 Oak Ave., Newport News, Va., to Gloucester, Va.

R. P. Higgins, 71 South Washington St., Wilkes Barre, Pa., to New Castle, Pa.

S. S. Hindman, State Prison, Nashville, Tenn., to Florence, Tenn.

J. A. Horigan, New Ridge Bldg., to 3100 Main St., Kansas City, Mo.

A. Lenty, Larchwood, Ia., to Hull, Ia.

Lewis Chemical Co., 105 West 50th St., to 161 West 36th St., New York City.

H. D. Marcus, Philadelphia, Pa., to 1719 Pacific Ave., Atlantic City, N. J.

D. C. Morieta, Saratoga, N. Y., to Saratoga Springs, N. Y.

O. K. Newell, 13 Central Park St., West, to 212 2nd Ave., New York City.

W. E. Person, 135 Spring St. to 84 East Cain St., Atlanta, Ga.

Jos. Pestal, 2328 Michigan Ave., to 2441 Prairie Ave., Chicago, Ill.

C. W. Reynolds, Holton, Kan., to Malcolm, Ia.

B. W. Rogers, Milton Junction, Wis., to 539 Van Buren St., Milwaukee, Wis.

P. D. Rothwell, Cooper Bldg., to 58 West Ellsworth St., Denver, Colo.

J. L. Salinger, 1510 North 8th St., to Philadelphia Medical Journal, 1716 Chestnut St., Philadelphia, Pa.

Nellie Schenck, 617 Walnut St., Knoxville, Tenn., to Rugby, Tenn.

H. P. Schlansky, 119 East 89th St., to 91 Madison St., New York City.

C. H. Shelby, 901 Stevenson Ave., Nashville, Tenn., to 20 Echols St., Memphis, Tenn.

J. R. Sheppard, 129 Howard St., New Orleans, La., to Lodi, Tex.

J. B. Sickler, Peckville, Pa., to Sea Breeze, Fla.

J. S. Smith, Dewey Hts. Sanitarium, New Albany, Ind., to Crescent Hill, Ky.

H. B. Steele, 101 Washington Ave., Northampton, Mass., to P. O. Box 943, Worcester, Mass.

A. F. Stotts, Marshalltown, Ia., to Medico-Chir. Hospital, Philadelphia, Pa.

R. E. Swigart, Cleveland, Ohio, to Giffin, Ohio.

Willis Walley, St. Louis, Mo., to Grafton, Miss.

C. H. Whitman, 431½ South Spring St., Los Angeles, Cal., to 902 Jackson St., Omaha, Neb.

A. C. Wildhagen, 19 Mill St., to 45 John St., Charleston, S. C.

W. Wilson, Indianapolis, Ind., to Yankeetown, Ind.

A. E. Wrensch, 17 North Calhoun St., to 1534 West Lexington St., Baltimore, Md.

J. H. Xelowski, 572 Blue Island Ave., to 709 Milwaukee Ave., Chicago, Ill.

G. W. Yeaton, Box 474, Hanover, N. H., to 66 North State St., Concord, N. H.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 14 to 20, 1901, inclusive:

George W. Adair, major and surgeon, U. S. A., from Fort Sheridan, Ill., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Bailey K. Ashford, lieutenant and asst.-surgeon, U. S. A., to accompany recruits from Fort Slocum, N. Y., to the Presidio of San Francisco, Cal., and return to his proper station.

Dallas Bache, colonel and asst.-surgeon-general, U. S. A., leave of absence on account of sickness.

Guy G. Bailey, acting asst.-surgeon, leave of absence extended.

Charles M. Gandy, captain and asst.-surgeon, U. S. A., from Fort Slocum, N. Y., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

John J. Gilhuley, acting asst.-surgeon, from Bridgeport, Conn., to temporary duty in the Department of the East.

Charles R. Greenleaf, colonel and asst. surgeon-general, U. S. A., from duty in the Division of the Philippines, to take effect June 1, 1901, then to proceed to San Francisco, Cal., for duty as chief surgeon.

Frederick C. Jackson, acting asst.-surgeon, now in San Francisco, Cal., to temporary duty in the Department of California.

William P. Kendall, major and surgeon, Vols., from further duty in the Division of the Philippines to duty at Fort Slocum, N. Y.

John S. Marshall, dental surgeon, U. S. A., from Washington, D. C., to Philadelphia, Pa., on official business.

Edward B. Moseley, major and surgeon, U. S. A., from the Division of the Philippines to duty at Fort Sheridan, Ill.

Robert T. Oliver, dental surgeon, from Washington, D. C., to Philadelphia, Pa., on official business.

George H. Penrose, major and surgeon, Vols., to temporary duty in the Department of California.

Walter Reed, major and surgeon, U. S. A., member of a board convened at the Army Medical Museum, Washington, D. C., to examine candidates for appointment in the Medical Department of the army.

Navy Changes.

Changes in the Medical Corps of the navy for the week ended Feb. 23, 1901:

Asst.-Surgeon R. C. Holcombe, detached from the *Glacier*, and to duty with detachment of marines at Pollok, P. I.

Surgeon J. W. Ross, U. S. N., retired by special order Department of Cuba, Feb. 15, 1901, to report to the chief sanitary officer, City of Havana, for duty.

Health Reports.

The following cases of smallpox, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 23, 1901:

SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 2-9, 1 case; San Francisco, Feb. 2-9, 7 cases.

Florida: Jacksonville, Feb. 9-16, 5 cases.

Illinois: Chicago, Feb. 9-16, 14 cases.

Kansas: Wichita, Feb. 9-16, 9 cases.

Louisiana: New Orleans, Feb 9-16, 4 cases, 4 deaths.

Michigan: Manistee, Feb. 9-16, 3 cases.

Minnesota: St. Paul, Jan. 26-Feb. 9, 8 cases.

New Hampshire: Manchester, Feb. 9-16, 1 case.

New York: New York City, Feb. 9-16, 25 cases, 6 deaths.

Ohio: Ashtabula, Feb. 9-16, 3 cases; Cleveland, Feb. 9-16, 48 cases; Youngstown, Feb. 9-16, 1 case.

Pennsylvania: Allegheny City, Feb. 9-16, 3 cases; Erie, Feb. 9-16, 1 case.

South Carolina: Greenville, Feb. 9-16, 1 case.

Tennessee: Memphis, Feb. 9-16, 19 cases, 1 death; Nashville, Feb. 9-16, 9 cases.

Wisconsin: Green Bay, Feb. 10-17, 1 case; Milwaukee, Feb. 8-16, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Jan. 19-26, 1 death.

Great Britain: Bradford, Jan. 6-13, 15 cases, 2 deaths.

Italy: Naples, Jan. 20-30, 26 cases, 2 deaths.

Mexico: City of Mexico, Jan. 27-Feb. 3, 1 death.

Russia: St. Petersburg, Jan. 19-26, 8 cases, 1 death; Odessa, Jan. 19-26, 13 cases, 8 deaths.

Scotland: Glasgow, Jan. 25-Feb. 8, 34 deaths.

Straits Settlements: Singapore, Dec. 22-29, 1 death.

YELLOW FEVER.

Cuba: Havana, Feb. 2-9, 3 cases, 1 death.

PLAGUE.

China: Hongkong, Jan. 5-12, 2 deaths.

Japan: Formosa, Tainan, Jan. 1-16, 28 cases, 22 deaths.

CHOLERA.

Straits Settlements: Singapore, Dec. 22-29, 16 deaths.

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The qualifications for membership require that the applicant be a member, in good standing, of a state or local medical society entitled to send delegates to the annual meeting of the American Medical Association. A list of these societies will be sent on request. Applications must be accompanied with a certificate showing that the applicant is a member of a recognized society, and should be sent with the annual dues—five dollars—to the treasurer, Dr. Henry P. Newman, 100 Washington Street, Chicago. Members receive The Journal free. Subscribers to The Journal may become members of the Association without additional expense if they are members of medical societies recognized by the Association. Those desiring to have their names transferred from the subscription to the membership lists should send certificates as above, with a receipt for their subscription to The Journal, covering the current fiscal year.

FISCAL YEAR.

The fiscal year of the American Medical Association is from January 1 to December 31; and the annual dues paid by a new member cover only the fiscal year, no matter at what time of year the membership is obtained. Those who pay their dues and join the Association at the annual meeting in June, for instance, pay only for the fiscal year which ends with the December following, and the annual dues for the following fiscal year are payable the succeeding January, at which time the treasurer sends a statement to each member. Such members, however, are entitled to The Journal for the full year, even though the membership be not continued.

PAPERS READ AT THE ANNUAL MEETING.

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NEWS.

Our readers are requested to send us items of news of a medical nature, also marked copies of local newspapers containing matters of interest to members of the medical profession. We shall be glad to know the name of the sender in every instance.

ORIGINAL PAPERS.

Articles are accepted for publication with the understanding that they are contributed solely to this journal.

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Half-tones, zinc etchings and other illustrations will be furnished by The Journal when photographs or drawings are supplied by the author.

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In ordering a change of address it is important that both the old and new addresses be given.

REMITTANCES.

Remittances should be made by check, draft, registered letter, money or express order. Currency should not be sent, unless registered. Stamps in amounts under one dollar are acceptable. Make all checks, etc., payable to "Journal American Medical Association," except those for annual dues. These should be made payable and sent direct to the Treasurer, Dr. Henry P. Newman, 100 Washington Street, Chicago.

The Journal of the
American Medical Association

VOL. XXXVI. CHICAGO, ILLINOIS, MARCH 16, 1901. No. 11.

Address.

THE STUDY OF ANATOMY.*

LEWELLYS F. BARKER, M.B. (TOR.)
CHICAGO.

With the advent of October, with its cool and bracing days and restful nights, there is regularly a quickening of activities in academic circles. The occupant of a professorial chair, re-invigorated by temporary sojourn in forest or field, at the seaside or in the hills, resumes his teaching with renewed enthusiasm, and engages again in that original investigation which represents the most absorbing interest of his life. The student, too, perhaps as yet less conscious of the actual need of an occasional remission from his labors, has nevertheless had his holiday, and returns to the college of his choice ready for another season of diligent application, and eager to begin once more the arduous tasks which the pursuit of knowledge entails.

It has long been customary in colleges in which medicine is taught, to call a meeting of the faculty and students at the beginning of the autumn session. Such a meeting permits of the reunion of former teachers and students, and the introduction and welcoming of new teachers and new students. It gives, further, opportunity for the making of certain special remarks; and I have noticed that there is almost universally a tendency on the part of the faculty to grant the privilege of remark-making to some member of it who has lately been added to the staff. Being myself one of the most recent additions to an already large staff-family, the privilege has this year been gracefully allotted to me. However great a sacrifice on the part of my colleagues this may represent, the new-comer, on this occasion, like the distinguished member of the faculty who last year addressed you, considers it a great favor to have the opportunity of expressing the pleasure he has in coming among you and being counted one of you, and to meet with an occasion on which he can, more or less generally, indicate the aims and scope of the science which he represents, and so publicly justify the position which he holds. Fortunately, in this latter respect, the task is an easy one, for anatomy has in medicine long ago won its place as a science essential as a basis for all subsequent medical studies, and, moreover, my predecessors in office have been men of such sterling merit, power and inspiration, that the subject is here appreciated and reverenced. Especially true is this of him who has immediately preceded me as the occupant of the chair, and who has left it in order to accept a chair of surgery; while we commiserate anatomy on losing so able a representative, we must congratulate surgery on the enlistment in its service of so well-trained and enthusiastic an anatomist. He has, at this College, developed, among other things, a course in surgical anatomy—easily one of the best in America—and this part of the anatomic work he has promised, for the present at least, to retain. You join with me I know, in wishing my colleague, Professor Bevan, a continuation of that success which he has already attained in the field of his ultimate choice.

The year in which we live marks an important epoch in the history of the College. Of a whole series of advances, I wish to call attention especially to one. Beginning with this autumn quarter, a closer relationship than has ever existed before between Rush Medical College and the University of Chicago has been established. Not entirely satisfied, for what true lover long is, with that "sisterly" relationship which the term "affiliation" represents the College has this year appointed to two of its fundamental chairs—physiology and anatomy—men who are already occupants of chairs in the same sciences at the University of Chicago. That such closer bond of union can not fail to be of the greatest value, both for Rush Medical College and for the University of Chicago, I confidently believe. That it is only the forerunner of a still deeper intimacy, many I am sure, both in the University and the College, fondly hope.

On thinking over anatomical subjects in the search for material for this address, the ideas which came to me grouped themselves, in the main, under two headings: 1. What does the science of anatomy include? 2. How can the study of anatomy best be prosecuted? Each of these headings corresponds to matter enough for any single occasion; I have therefore decided to spend the time in a consideration of the former of the two questions, and to reserve for another time and place what I have gathered in answer to the latter.

Of the whole group of the natural sciences, there is perhaps no other member, the province of which is less well understood by the general public than is the science of anatomy. As ordinarily thought of by the layman, it is a science, the study of which necessarily precedes the practical work of medicine and surgery; a science which is largely if not wholly descriptive, and one which, to be mastered, requires prolonged occupation, scalpel in hand and pipe in mouth, with dead and partially decomposed human beings. Such a view of the science, though perhaps not surprising when we recall the methods by which anatomy—so-called—has frequently in this and other countries, been prosecuted, could, I do not need to tell you, be scarcely more widely removed from the truth. Anatomy is not simply a descriptive science; the study of it as a preparation for practical medicine and surgery represents only one side of its interest and usefulness; the scalpel is now perhaps the coarsest instrument it employs; its work is by no means confined to the human body alone, much less to the dead human body, and when it does deal with the

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* Delivered before the Faculty and Students of Rush Medical College, Oct. 5, 1900.

Willis Walley, St. Louis, Mo., to Grafton, Miss.

C. H. Whitman, 431½ South Spring St., Los Angeles, Cal., to 902 Jackson St., Omaha, Neb.

A. C. Wildhagen, 19 Mill St., to 45 John St., Charleston, S. C.

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Address.

THE STUDY OF ANATOMY.*

LEWELLYS F. BARKER, M.B. (Tor.)
CHICAGO.

With the advent of October, with its cool and bracing days and restful nights, there is regularly a quickening of activities in academic circles. The occupant of a professorial chair, re-invigorated by temporary sojourn in forest or field, at the seaside or in the hills, resumes his teaching with renewed enthusiasm, and engages again in that original investigation which represents the most absorbing interest of his life. The student, too, perhaps as yet less conscious of the actual need of an occasional remission from his labors, has nevertheless had his holiday, and returns to the college of his choice ready for another season of diligent application, and eager to begin once more the arduous tasks which the pursuit of knowledge entails.

It has long been customary in colleges in which medicine is taught, to call a meeting of the faculty and students at the beginning of the autumn session. Such a meeting permits of the reunion of former teachers and students, and the introduction and welcoming of new teachers and new students. It gives, further, opportunity for the making of certain special remarks; and I have noticed that there is almost universally a tendency on the part of the faculty to grant the privilege of remark-making to some member of it who has lately been added to the staff. Being myself one of the most recent additions to an already large staff-family, the privilege has this year been gracefully allotted to me. However great a sacrifice on the part of my colleagues this may represent, the new-comer, on this occasion, like the distinguished member of the faculty who last year addressed you, considers it a great favor to have the opportunity of expressing the pleasure he has in coming among you and being counted one of you, and to meet with an occasion on which he can, more or less generally, indicate the aims and scope of the science which he represents, and so publicly justify the position which he holds. Fortunately, in this latter respect, the task is an easy one, for anatomy has in medicine long ago won its place as a science essential as a basis for all subsequent medical studies, and, moreover, my predecessors in office have been men of such sterling merit, power and inspiration, that the subject is here appreciated and reverenced. Especially true is this of him who has immediately preceded me as the occupant of the chair, and who has left it in order to accept a chair of surgery; while we commiserate anatomy on losing so able a representative, we must congratulate surgery on the enlistment in its service of so well-trained and enthusiastic an anatomist. He has, at this College, developed, among other things, a course in surgical anatomy—easily one of the best in America—and this part of the anatomic work he has promised, for the present at least, to retain. You join with me I know, in wishing my colleague, Professor Bevan, a continuation of that success which he has already attained in the field of his ultimate choice.

The year in which we live marks an important epoch in the history of the College. Of a whole series of advances, I wish to call attention especially to one. Beginning with this autumn quarter, a closer relationship than has ever existed before between Rush Medical College and the University of Chicago has been established. Not entirely satisfied, for what true lover long is, with that "sisterly" relationship which the term "affiliation" represents the College has this year appointed to two of its fundamental [illegible] and anatomy—men who are already [illegible] in the same sciences at the University of Chicago. That such closer bond of union can not fail to be of the greatest value, both for Rush Medical College and for the University of Chicago, I confidently believe. That it is only the forerunner of a still deeper intimacy, many I am sure, both in the University and the College, fondly hope.

On thinking over anatomical subjects in the search for material for this address, the ideas which came to me grouped themselves, in the main, under two headings: 1. What does the science of anatomy include? 2. How can the study of anatomy best be prosecuted? Each of these headings corresponds to matter enough for any single occasion; I have therefore decided to spend the time in a consideration of the former of the two questions, and to reserve for another time and place what I have gathered in answer to the latter.

Of the whole group of the natural sciences, there is perhaps no other member, the province of which is less well understood by the general public than is the science of anatomy. As ordinarily thought of by the layman, it is a science, the study of which necessarily precedes the practical work of medicine and surgery; a science which is largely if not wholly descriptive, and one which, to be mastered, requires prolonged occupation, scalpel in hand and pipe in mouth, with dead and partially decomposed human beings. Such a view of the science, though perhaps not surprising when we recall the methods by which anatomy—so-called—has frequently in this and other countries, been prosecuted, could, I do not need to tell you, be scarcely more widely removed from the truth. Anatomy is not simply a descriptive science; the study of it as a preparation for practical medicine and surgery represents only one side of its interest and usefulness; the scalpel is now perhaps the coarsest instrument it employs; its work is by no means confined to the human body alone, much less to the dead human body, and when it does deal with the latter, the material can be so well preserved that even the fragrant Havana is said to be more offensive to some sensitive souls than are the odors from the well-kept preparation room.

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* Delivered before the Faculty and Students of Rush Medical College, Oct. 5, 1900.

Even medical men differ markedly in their conception of what anatomy includes, their ideas being largely based on the kind of anatomy they themselves were taught, and on the anatomic needs of the particular branch of medicine which, after graduation, they have cultivated.

Nor is there uniformity of opinion among the pure anatomists themselves, as can be readily seen by a perusal of the various addresses made by scientific anatomists in different parts of the world during the last twenty years. A free expression of opinion on the subject has, however, gone far to make the aims and scope of the science clearer, until at present its principal representatives are more clearly in accord, with regard to them, than ever before. In what this accordance consists, I can, I believe, make clearest to you by glancing briefly at the various steps through which the science has passed from the period when the earliest anatomic observations were recorded to the present day.

There can be no doubt that from the earliest times, curiosity concerning, and interest in the make-up of the human body has existed. The references to man's body and its organization frequently to be met with in the pages of the old Hindu Vedas and of the earliest writings of all the oriental nations, make this very evident. Nevertheless, the awe in which men stood before the human cadaver, together with the penalties threatened by religious leaders for any molestation of it, appear to have effectually prevented any systematic examinations; and the little knowledge possessed by the ancients, aside from the conclusions drawn from animals killed for food or for sacrifice, seems to have been drawn from the instances in which, through the violence of war, the chase, or the natural elements, the human body became dismembered or eviscerated.

The earliest dissections of the human body of which no doubt exists, are those which were undertaken at the Alexandrian School, by Herophilus and Erasistratus, supported and protected by the intelligent Ptolemaic rulers. The name of Herophilus is still familiar to every beginner of anatomic studies in the term Torcular Herophili. The statement is made, though I hope it is not true, that these daring anatomists went so far, with Ptolemy's sanction, as to dissect living criminals, from which Tertullian designated Herophilus as *lanius*.

This opportunity for the anatomic investigation of the human body appears to have been unique, and it continued only for a short time. Even Galen's studies, the results of which were held, for the following ten centuries at least, to be infallible, were limited to the bodies of animals; he recommended, it may be remembered, the study of the bodies of apes and swine—the animals which in his opinion were nearest to human beings. After Galen, the natural horror which the examination of the dead body excites, together with the edicts of the church against dissection, prevented any further progress of descriptive human anatomy for a very long period. The church declared that Galen had been infallible, and that therefore no further anatomic studies were necessary. Fortunately for science, which knows but little of infallibility, certain of its votaries in high favor at Rome, gained permission in the fourteenth century to make dissections of human bodies, and to use them for demonstration before students. Mondini in Bologna again opened the path for scientific anatomic inquiry, and started in Italy a movement which placed that country, as far as medicine is concerned, in the lead. Students from distant lands were attracted, as they always have been and always will be, to the point where progress was making the greatest headway.

The great Vesalius, often known as the father of anatomy, was among these wandering scientists. Born in Belgium, and educated in France, he prosecuted his anatomic studies in Italy, especially when professor at Padua, to such a degree that he merits a place among the world's greatest reformers. This energetic, truth-seeking, idol-breaking, authority-denying man dared to look at things as he saw them, rather than as Galen had said they should be, and thus made discoveries of the first importance in anatomy; by his artistic powers he rendered many of them imperishable; best of all, he broke forever the tyranny of tradition in anatomic knowledge, and threw wide open the gate by which men must always enter in the pursuit of anatomic truth. Vesalius was a contemporary of Luther; the year of his death is that of the birth of Galileo and of Shakespeare.

It was the spirit which animated Vesalius which later led William Harvey, the founder of physiology, to the discovery of the circulation of the blood, and Giovanni Battista Morgagni, the founder of pathology, to that mode of conception which Virchow has designated "the anatomical idea in medicine." It is the spirit which is embodied in every scientific worker of today who accepts the records of past investigation only as a guide—a guide which must be fallible since it is human—and which, therefore, must be repeatedly controlled; a guide which needs constant revision on account of the ever-increasing extension of the domain of sense, and one which, if not added to significantly by the scientist in his lifetime, will stand as an everlasting witness to his inefficiency, a perpetual testimony to his lack of consequence.

Like all the natural sciences, anatomy in its earlier stages consists of necessity, in the amassing in an empirical way of a store of naked facts. In other words, the subject is purely descriptive until a sufficient number of facts have been collected to make their arrangement and classification worth while. Adequate descriptions are based on intelligent observation which in turn is dependent on the skilful use of the organs of sense, including the means which modern technique is ever inventing to extend them. The body is examined externally and internally in its various parts; it is looked at, it is felt. The size, shape, color, weight, consistence, and reciprocal relations of the parts are noted; the results are recorded, the attempt being made to establish the material content of the science with all possible certainty, sharpness, and clearness. The parts have first to be distinguished and named, then accurately described, their physical characters being established in language. The description of a natural object that shall call up in the mind of the reader a precise image of the object, and that shall serve as a reliable guide to a succeeding observer, does not fall within the province of every man's capacity; happy indeed is the anatomist who possesses the power, for, as has more than once been pointed out, an exact and clear description of the known is often of as great value as the so-called "discovery" in the region of the unknown.

The satisfactory naming of the various parts alone is a task of far greater difficulty than at first appears.

An object must be studied for a long time, in many countries, and by men who know the relations of anatomy to every subject with which that science is allied, before a name for a part which shall be in accord with all the requirements can be decided on. Almost every part has at various times received a series of names; periodic revisions of nomenclature by representative committees are accordingly desirable in order to arrive at uniformity among anatomists and to relieve the science of an immense number of names, since at best it must be grieviously burdened.

Ever since the time of Vesalius there has been an unbroken series of anatomic observers who have devoted their powers to the attaining of skill in dissection and anatomic description; with energy and endurance and often at great personal sacrifice, this band of anatomists has developed this side of our science until it has reached the degree of precision which characterizes it to-day; a state, indeed, which many believe to be practically complete and incapable of further progress. Of the difficulties overcome by Americans in helping with this work since Mr. Giles Firman made the "first anatomy in the country," a good idea can be gained from the admirable historical review that we owe to E. M. Hartwell. While it is obvious that there must be a temporal limit to the discoveries which the naked eye is to make in anatomic fields, one has nevertheless only to refer to the current journals to see that the limit has not yet been reached. But the limits of progress in anatomic description will by no means be synchronous with those of macroscopic discovery of the objects themselves; indeed, considering the complexity of man's architecture and the different and ever-varying view-points whence descriptions are being written, it is scarcely conceivable that man will ever attain to descriptions which will be satisfactorily final. To the surgeon, to the artist, to the physiologist, to the scientific anatomist the details of parts are of utterly different significance; the varying scale of anatomic values requires in each case a special description; an objective characterization of all details, merely as such, would make anatomic descriptions so ponderous and chaotic as to render them totally useless to anybody. Nor can illustrations, in colors and otherwise, which are perhaps even more valuable than anatomic descriptions, ever be completely objective. The exact plates of anatomic objects which approach of late years ever nearer to that degree of accuracy which will permit of the taking from them of mathematical measurements, never attain actually to perfection; there must always be an element of subjectivity in them which may be inconsonant with the needs of some other observer at some other time.

Again, the greater or less degree of variability to which all parts of the animal body are subject makes it difficult for anatomists to agree as to what shall be called normal, and thus the same object has frequently to be described in several different ways, and pictorially multiply exactly represented. There thus remains, and ever will remain, a task for the anatomist in the domain of anatomic description and illustration (Cf. His, W.).

If it be true that in the fields just referred to there is still much work to be done, the statement is all the more justified with regard to the taking of measurements and weights of the body and its parts. The shape of the natural objects is nearly always such that the localization of fixed points whence measurements can be taken is rendered very difficult—so difficult that frequently the comparison of the measurements of one observer of an object with those of another observer of the same are useless. Again, owing to the variability of the bodily dimensions in the two sexes, in different races, at the various ages of life, according to individuality or under different physiologic conditions, unless a whole series of data accompanies a given measurement, the result may be of no value to a succeeding observer. In modern anthropology, however, definite criteria are always attended to, and the measuring method is proving to be of the highest service in the elucidation of the questions which that science has to solve.

The difficulties of anatomic measurement in large part obtain also when the weighing of anatomic objects is undertaken. Notable results have already been obtained, however, not the least of those in connection with the central nervous system being gained through the comparatively recent work of my colleague, H. H. Donaldson, in the University of Chicago. The application of the method to the determination of the normal by H. Thoma may also be referred to as the beginning of a long series of investigations which, in the end, can scarcely fail to be of the greatest importance. As His, who has discussed this and the foregoing subjects in an admirable manner, points out, it is difficult to imagine how the study of variations in constitution is to be approached unless this and similar methods are the ones employed. As he says, it must be of decisive influence for the physiologic capability of an individual, whether in his organism the musculature predominates over his nervous system, his epithelial tissues or his glandular organs, whether his heart is relatively large or small, whether accordingly it can increase the average blood-pressure in the arteries to a great or to a slight degree, whether the man has a large or small liver, or whether he has a long or short alimentary canal. The study of anatomy with the unaided sense organs is, as we have seen, one of no small magnitude, and one not yet complete. What then is to be said of that descriptive anatomy which invades the territory into which the eye, only with the aid of the microscope, can penetrate. The field of the microscopic anatomist is at least a thousand times wider than that of the macroscopic worker, and in that field what has been said above concerning description, pictorial representation and anatomic measurement equally holds good. It will yet be long ere the collection of microscopic data will have been completed. New methods open up new problems, and at present progress, descriptive microscopic anatomy may probably occupy workers for centuries to come. Even with the methods and microscopes now at our disposal we have entered a museum the largest part of which has yet to be catalogued, and who can say what new doors the methods and the microscopes of the century just before us are about to open up. The science of histography is almost as undeveloped as was geography before the voyage of Columbus. Between the histographic world of to-day and the architectural world of stereochemistry who will dare to prophesy what rich territories may exist?

The mere observation and registration of naked facts does not, however, satisfy for long the cravings of the investigating human intelligence. Indeed, there is something of a blunting character about the process if long continued without the synchronous operation of other faculties of the intellect. Man is a classifying and generalizing animal; there lies deep in his nature a desire to arrange the facts he observes in an orderly manner, with the object of understanding them. It is in the attempt to satisfy this human tendency that anatomy, instead of remaining a purely descriptive science, becomes elevated to a plane on a level with the other inductive sciences.

Evidences of attempts at anatomic classification are found among the earliest anatomists. The close resemblance of certain parts to one another soon gave rise to the idea of organic systems—such as the muscular and nervous systems. The keen observations of Aristotle on the partes similares and the partes dissimilares may be recalled, as well as those of Fallopius, outlined in his "Tractatus quinque de partibus similaribus." It was left to the organizing brain of the young Frenchman, F. Xavier Bichat, to get a grasp, for the first time, of the relation of elementary tissues to the general architecture of the body. Although, through over-work and impecuniosity, his penetrating eyes were forever closed at the early age of about 31 years, Bichat left behind him three treatises—his "Traité des membranes," his "Récherches physiologiques sur la vie et la mort," and his "Anatomie générale"—a legacy so valuable that we can not help lamenting, with wondering regret, the too early arrest of his labors. He recognized the fact that whereas in chemistry the more complex bodies are composed of simple elements, so in the architecture of man's body simple tissues are variously combined to form the complex mixture of tissues which are ordinarily known as organs. He distinguished some twenty-one systems or tissues—the cellular, the osseous, the fibrous, the cartilaginous, the nervous, the muscular, the medullary, etc.—basing his classification on the manner in which each tissue behaves in the presence of various reagents, the physical and vital properties of each, and, finally, the character of each when met with under diseased conditions. In other words, Bichat was the founder of the modern science of histology, or, as it is sometimes designated, general anatomy.[1]

Before following the progress of anatomy further along this line, a word must be said concerning what must be regarded perhaps as the first direction taken by the investigating mind toward the understanding of organic forms, namely, the physiologic—in its first stages, the purely teleological.

As has long since been pointed out, the language of anatomy is sufficient evidence of the long existence of the teleological conception of this science. For thousands of years the individual parts of the body have been known as "organs," and the processes going on in them as "functions." Just as function was unthinkable without a corresponding organ, so an organ without function was inconceivable, and thus, wherever in the series of well-understood parts of the body one remains over whose purposeful participation in the processes of life is not understood, toward this is directed over and over again the mental acumen of the investigator to assign to the reluctant organ a definite significance.[2] It is not my purpose here to enter into a discussion of teleology. The world has been widely enough explored to utterly dispose of that gross anthropomorphic form of teleology which pointed to a humanly scheming architect of the universe, and whether or not we accept some more correct form of teleology is, at present, a matter for individual opinion. This much is certain, that while no teleological view of Nature actually explains the organization of a human body, the teleological conception has been particularly heuristic in its effects in the investigation of the relation between the physical processes in, and the physical characters of, the various parts of the body. Ever since Galen, though animated by a false teleology, wrote his "De usu partium," in which the size, position, number, consistence and structure of the various parts are treated as facts which can be understood only through the investigation of the purposes which they subserve, this mode of consideration has been among the most influential. Even to-day a large part of the profitable research undertaken by anatomists, physiologists and pathologists has for its aim the elucidation of the relation of structure to function, especially in microscopic domains. The work done in Ludwig's laboratory was largely of this nature, and as recently as 1883 H. v. Meyer[3] has asserted that the only possible way of understanding the organs is to proceed to the study of them from the physiologic viewpoint. But if this were true, then all scientific anatomy would be physiology, a statement which narrow-minded physiologists might applaud, but which broader men know to be untrue. Physiology is one of the daughters of anatomy, and is not likely so soon to forget the fifth commandment. Johannes Müller was the last great scientist who covered both fields of anatomy and physiology; since his time investigators have cultivated one of the two at the expense of the other, a division of labor which we must recognize on the whole as beneficial, though that it is accompanied by certain drawbacks must also be confessed. Especially difficult is it to sharply separate the study of structure from that of function in the science of cytology, founded by Schleiden and Schwann, pupils of Johannes Müller in the fourth decade of this century. The development of the cell-doctrine, modified as it was somewhat later by the introduction of the protoplasm theory by Max Schultze, marks a most important epoch in the history of both anatomy and physiology. Its value for the more practical side of medicine is sufficiently in evidence when one of its direct outgrowths, the cellular pathology of Rudolph Virchow, is recalled. The appalling elaboration of technical methods during the last few years has led to the accumulation of cytographic data which remove all the comfort we once had in looking on the cells as elementary structures. Though cytophysiology is as yet far behind cytography in its state of development, there no longer remains any doubt that in approaching the cell we stand before an organism of enormous complexity of constitution, endowed with functional activities which must for long remain to us unfathomable. Any one who has worked much with protoplasm and nucleus, with archiplasm and centrosome, with cell-fibrils and cell-granules under various physiological conditions, can not fail to appreciate the fact that here only the threshold of inquiry has been crossed—the exploration of the real nature of the cell only just begun. Indeed, the evidence is fast accumulating in favor of the opinion that many of these morphological cell-constituents represent precipitates due to the action of reagents, and the laws governing their regular appearance under definite conditions are being investigated. It is exactly in these studies that structural and functional investigation still do well to go hand in hand, a fact which a survey of the cytological hand-books, now becoming so numerous, will show, is meeting with general recognition. I believe it was Du Bois Reymond who ventured the statement that "an ocean steamer, with all its machinery and intricacies of construction, is far less complicated in its composition than a cell." Would that the cell were no more complicated than the ocean steamer in construction!—the modern investigator would then soon be ready with the solution of its problems. Alas, the difficulties are not confined to the study of these organisms as individuals; already we have entered on the investigation of their social relations, and cell-altruism and cell-egoism, cell-states and revolutionary cells are discussed as actively among cytologists as are the similar social questions concerning organic individuals of another order by the people at large. Further, in cytophysics and cytochemistry, research is at present most active—these subjects representing one of the most interesting subdivisions of recent physiology. Should the gulf between the present microscope picture of the cell and its chemical structure ever be bridged, stereochemistry would enter into the domain of anatomy. So much in general with regard to the physiologic view-point in anatomy!

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[1] Duval, M.: L'anatomie générale et son histoire; Rev. scient., Paris, 1886, xxxvii, 65; 107.

[2] His, W.: Ueber die Bedeutung der Entwickelungsgeschichte fuer die Auffassung der Organischen Natur, Leipzig, 1870.

[3] Von Meyer, H.: Stellung und Aufgabe der Anatomie in der Gegenwart; Biol. Centralbl., 1883, No. 12.

Closely allied to the foregoing, and in reality an offshoot from it, is the mode of consideration of the surgical and topographical anatomist. In this branch the individual regions and cavities of the body are dealt with with regard to the reciprocal position of the various organs and systems. Surgical anatomy studies these relations only in as far as they are of importance in operative procedures; topographical anatomy, a wider subject, studies the relations mentioned independently of their significance to the surgeon. The various regions of the body are studied sometimes in layers, sometimes with regard to serial clues to a particular structure. Sections of frozen cadavers have here proved to be of great value for the study of relations and for helping the student to make mental reconstructions of the parts analyzed by dissection. Surgical and topographical anatomy are thus seen to be subjects of very high practical importance—the former especially for the surgeon, the latter also for the worker in internal medicine. It is this kind of anatomy which has been brought to so high a state of cultivation in Great Britain, and especially in London, where most of the anatomy has been taught by men in surgical practice. Valuable as such instruction is for surgery and medicine, it should not be forgotten that it is applied anatomy rather than anatomy proper, and no less a scientist than Macalister has deplored the lack of advances in anatomy in England, attributing it largely to the one-sided mode of instruction in vogue, and to the examinations, to the passing of which the teaching is, in large part, directed. Surely certain morphological considerations are as important for the student of anatomy as the learning by heart of the various relations of an artery, especially if the student is not to become a surgeon; it would be melancholy indeed if there were not at least some members of the anatomic classes who regarded the study of the architecture of the brain and spinal cord as interesting and as important as that of the perineum.

But anatomy as a science would never have attained to the dignified position it now holds had the minds engaged with it remained satisfied, after observing and registering its material content, with attempting the explanation of the human body from the physiologic view-point or with exhausting the possibilities of its relation to the surgeon's knife.

As in the other natural sciences, the causality-need of the intelligence has forced the anatomist to undertake the investigation of the origin of the organic forms which he studies, and of the relations of these forms to other similar and dissimilar organic forms accessible to examination. In other words, the comparative and the genetic methods of study have been resorted to. Comparative anatomy and embryology together constitute morphology, at least in the sense in which the term is ordinarily used, and in morphology we recognize the part of anatomy which makes it truly worthy of being designated a science.

In the application of the comparative method, not only are the different parts of the human body compared with one another—the arms with the legs, the brain with the spinal cord, the skull with the vertebral column, the various segments and segmental partitions with one another, but man, recognized as a member of a long series of animals, is compared with each of them in turn, and they with one another, with the object of establishing groups of type forms and of learning the plan of architecture, not only of the single creature, but also of the whole series. At first, anatomists studied the forms which to them seemed to resemble man most closely, but the gradual transition from one form to another was so striking that animal after animal was studied until, finally, the whole world of organisms has been submitted to the examination of the comparative investigator. Oken and Goethe, Cuvier, Meckel, Geoffroy St. Hilaire, Lamarck, Wallace, Darwin, Haeckel, Huxley, Gegenbaur and Leidy are names which have become very familiar to us in this field. The world of living creatures is a unitary system, of which man is an inseparable portion. First, when the whole system has been worked through do the form and significance of many of man's parts become intelligible. The animal series can be thought of as a tree with the simplest forms at the root, the trunk branching at its origin, each branch in turn subdividing into limbs and twigs until the highest degree of differentiation is reached. It is this recognition of the lawful relation of organisms to one another which the study of comparative anatomy has afforded us. Such a recognition, now general, was little less than startling to those who first arrived at it. That it pointed to some more general law, was obvious. As Goethe, himself no mean participator in comparative studies, beautifully expressed it:

> Alle Gestalten sind ähnlich und keine gleichet der anderen,
> Und so deutet das Chor auf ein geheimes Gesetz.

Has this secret law been discovered? Many believe so, and look upon Darwin's doctrine of descent as a generalization worthy, on account of its scientific value, of being placed side by side with Newton's theory of gravitation. Whether the evolutionary doctrine be unequivocally accepted or not, certain it is that the relationship of forms which comparative anatomy reveals finds in this genealogic conception of Darwin a more satisfactory explanation than any other hitherto offered.

Closely allied to the phylogenetic mode of consideration is that which we designate as the embryologic, ontogenetic or developmental. In the human species, as in every other, the life of the individual member is of short duration; each human organism has a beginning, a period of growth and development, followed, even in the life of maximum length, in the course of a few decades by decline and death. Generation follows generation as wave follows wave on the surface of a ruffled sea. In the transference of life from one generation to another the material substratum sinks to a minimal amount—the new human being begins as a fertilized egg-cell 1/120 of an inch in diameter, weighing only a minute fraction of a gram. From this simplest of beginnings it gradually passes through a long series of developmental stages, the character of these stages varying somewhat under environmental influences, each stage being the necessary consequent of a preceding one, and at the same time the necessary antecedent of the stage which follows it, until, finally, the organism attains to the fulness of differentiation of which, under the circumstances of its environment, it is capable.

In this long series of developmental stages, which every mammal passes through, the earliest are very, very simple and correspond in form closely with the lower forms in the animal kingdom. But as cell-division in the embryo proceeds, the shaping of the organism becomes more complex, resembling higher and higher forms of animal life, until, finally, that of mammals is assumed. Even at this period the unskilled observer might easily be confused if he were required at a glance to distinguish a human embryo from those of several other mammals at a similar period of development. Ultimately, the differential characters of the species become clearly marked, and even the tyro can easily recognize them. The more skilled the observer, however, the earlier in the development will the species-criteria be decisive.

Comparative embryology becomes all the more astonishing a study when we realize that the embryologic history of every higher animal is, for a long period at least, almost identical with that of a whole series of allied forms. No wonder then, this state of things being acknowledged, that the embryologists, like the comparative anatomists, have pictured the genetic relations of the different animal forms also as a tree, a tree which on close examination is found to accord very closely with the tree of relationship constructed by the comparative anatomists.

Comparative anatomy and embryology are therefore closely interwoven subjects, and each may, in a way, be looked upon as a control for the other, though each has its special problems, and each sets about the solution of these in a manner peculiar to itself. Take, for example, the attempts at an explanation of the series of forms through which the individual passes in its development. Many comparative anatomists, accepting Darwin's doctrine of the origin of the species through a struggle for existence among generations influenced by heredity and variation, would explain the development of the individual member of a species as a temporarily compressed recapitulation of the developmental course of the species as a whole. While this doctrine that "ontogeny repeats phylogeny" has been maintained by eminent scientists, there are others who are unwilling to accept what can not be proved; and some of the embryologists especially feel it their province to attempt to explain from embryologic studies alone, and without reference to phylogenetic history, the origin of the various form-stages through which the individual passes. Already great strides have been made in the direction mentioned, especially through the investigation of the laws of growth, and the field of developmental mechanics, though so lately entered upon, has proven to be one of the most fruitful of those thus far tilled. One of the foremost investigators along these lines goes so far as to assert that the growth of every organic germ must, as a process strictly regulated according to time and space, possess a mathematical expression in which the velocity of growth of each point is determined in its dependence on the time and the position. Whether such formulæ will ever be set up, and the kingdom of organic forms thus subordinated to the domination of simple numbers, seems doubtful, but in any case the conception is an interesting one. We need not, however, look into the nebulous distance for the advantages to accrue from developmental study. Near at hand are thousands of facts of the greatest importance for anatomy as a whole, and for the practical branches of medicine and surgery to be gained only through this method of study. There is scarcely a part of the body but what is now better understood than was otherwise possible. I need only mention the remarkably complicated morphology of the brain and sense organs, the distribution of the intestines, the grouping of the various voluntary muscles, the puzzling course followed by certain of the nerves and the origin of the reproductive organs in the two sexes, to call to mind some of the features which embryology has done much to illuminate.

I dare not pass by unnoticed here two phases of investigation which naturally follow upon the others, but which have only very recently begun to be extensively cultivated, viz.: those of histogenesis and comparative histology. Histogenesis stands in the same relation to comparative histology as does embryology to comparative anatomy. Indeed, the anatomist is simply pushing the microscope into embryology and comparative anatomy, and the progress made is, in a way, comparable to the advance from gross descriptive to microscopic anatomy. By histogenesis we mean the study of the development of the individual tissues, including that of the individual cells—cytogenesis. By comparative histology and cytology we refer to the comparative microscopic study of the various tissues and cells through a series of animals. The light thrown by these methods on many of the unsolved problems of structure is unexpectedly brilliant, and the future has much to hope from them; Macallum, too, has shown how important these methods can be in helping to explain certain pathologic phenomena met with in heart muscle, and there can be little doubt but that we are on the brink of the discovery of a series of relations between histogenetic conditions and pathologic processes.

Lastly, as a crowning piece to the whole system of anatomic study, experimental morphology must be recognized. As but a child among the kindred sciences, it is of robust constitution, being the offspring of vigorous parents, and, in this country especially, in an environment most suitable for its healthy growth. The anatomist is no longer confined to the study of adult forms, or of forms in their natural mode of development; he can now, to a certain extent, artificially control form-production by resorting to the experimental method. The experiments which have been made upon heteromorphism, upon the artificial production of malformations, and upon the grafting of embryos, are full of interest, so much so as to disturb the equanimity of the soberest of scientists. During the last year or two we have been—I was about to say—shocked by the bringing of the proof by my colleague, Professor Loeb, that the eggs of several species not naturally parthogenetic can be fertilized, or at any rate brought to development, in the absence of spermatozoa, solely through the action of simple physiochemical influences. With miracles such as these already performed, we can but stand in awe of the work of the future.

Most sketchily and imperfectly, I fear, I have tried to give you an idea of what the study of anatomy includes, viz.: descriptive or systematic anatomy—gross and microscopic—physiological, surgical and topographical anatomy; histology or general anatomy, including histography and cytology, comparative anatomy; embryology; comparative histology and embryology; histogenesis, and, lastly, experimental morphology. Assuredly the subject is wide. It is, I am sorry to say, too wide to be mastered in all its details even when a whole life-time is devoted exclusively to it. The scientific anatomist, after familiarizing himself with the main facts and principles of its various subdivisions, does best, in agreement with the great law of division of labor, to direct his efforts toward the acquisition and promulgation of knowledge, in some one portion of it.

BIBLIOGRAPHY.

In the preparation of this address, I have made free use of a large number of addresses made on similar occasions by other anatomists. I have had no hesitation in borrowing liberally, as will be immediately apparent to those who are familiar with the bibliography. Especially useful to me have been the addresses and papers of His, Hertwig, v. Kölliker, Macalister, Mall, and Waldeyer. The following are some of the sources consulted:

Baker, F.: The rational method of teaching anatomy; Med. Record, N. Y., 1884, xxv, 421-425.

Bevan, A. D.: What ground should be covered in the anatomical course in American medical colleges, and what part of this ground should be covered in the first year? What in the second year? Proc. Assn. Am. Anat., Wash., 1894, vi, 47-49.

Brown, J. M.: The science of human anatomy; its history and development; Edinb. Med. Jour., 1884-5, xxx, 585-596.

Browning, W. W.: Remarks on the teaching of practical anatomy; Brooklyn Med. Jour., 1894, viii, 329-341.

Budge, J.: Die Aufgaben der Anatomischen Wissenschaft; Deutsche Rev., 1882.

Cleland, J.: Lecture on Anatomy as a Science and in Relation to Medical Study; Lancet, London, 1892, ii, 928, 982.

Cooke, T.: The Teaching of Anatomy; Its Aims and Methods; Ibid., 1893, ii, 1153, 1350.

Cunningham, D. J.: Bologna; the Part which it has Played in the History of Anatomy; Its Octocentenary Celebration; Dublin Jour. Med. Sci., 1888, 3, s., lxxxvi, 465-484.

Debierre, C.: L'Anatomie, son passé, son importance et son rôle dans les sciences biologiques; Rev. Scient., Paris, 1888, 3 s., xv, 68-74.

Duval, M.: L'anatomie générale et son histoire; Ibid., 1886, xxxvii, 65-107.

Dwight, T.: The Scope and the Teaching of Human Anatomy; Boston Med. and Surg. Jour., 1890, cxxiii, 337-340; also, Methods of Teaching Anatomy at the Harvard Medical School, especially Corrosion Preparations; Ibid., 1891, cxxiv, 475-477.

Flower, W. H.: An Address Delivered at the Opening of the Section of Anatomy; Tr. Internat. Med. Cong., London, 1881, i, 133-144.

Gegenbaur, C.: Ontogenie und Anatomie in ihren Wechselbeziehungen betrachtet; Morphol. Jahrb., Leipzig, 1899, xv, 1-9.

Hertwig, O.: Der anatomische Unterricht; Jena, 1881.

Hartwell, E. M.: The Study of Human Anatomy, Historically and Legally Considered; Johns Hopkins Univ. Stud. Biol. Lab., Balt., 1881-2, ii, 65-116.

His, W.: Ueber die Bedeutung der Entwickelungsgeschichte für die Auffassung der organischen Natur; Leipzig, 1870. Ueber die Aufgaben und Zielpunkte der wissenschaftlichen Anatomie; Leipzig, 1872.

Humphrey, G. M.: An Address on the Study of Human Anatomy; British Med. Jour., London, 1887, i, 1030.

Von Kölliker, A.: Die Aufgaben der anatomischen Institute: Würzburg, 1884.

Krause, W.: Die Methode in der Anatomie; Internat. Monatschr. f. Anat. u. Histol., Berlin, 1884, i.

Keiller, W.: The Teaching of Anatomy; N. Y. Med. Jour., 1894, ix, 289, 513, 545.

Keen, W. W.: A Sketch of the Early History of Practical Anatomy; Phila., 1870.

Macalister, A.: Introductory Lecture on the Province of Anatomy; British Med. Jour., London, 1883, ii., 808-811.

Mall, F. P.: The Anatomical Course and Laboratory in the Johns Hopkins Medical School.

Von Meyer, H.: Stellung und Aufgabe der Anatomie in der Gegenwart. Biol. Centralbl., 1883.

Marks, G. H.: The Study of Anatomy; Its Position in Medical Education in England and in America; Boston Med. and Surg. Jour., 1885, cxiii, 104-107.

Pepper, W.: Introductory Remarks at the Opening of the Wistar Institute of Anatomy and Biology; Univ. Med. Mag., Phila., 1893-4, vi, 569-572.

Robinson, B.: A Plea for the More Thorough Study of Visceral Anatomy; Gaillard's Med. Jour., N. Y., 1894, lix, 289-296.

Schiefferdecker, P.: Der anatomische Unterricht; Deutsche Med. Woch., Berlin, 1882, viii, 465-467.

Shiels, G. F.: A Plea for the Proper Teaching of Anatomy; The Journal, Chicago, 1894, xxiii, 110-112.

Testut: Qu'est-ce que l'homme pour un anatomiste? Revue Scient., Paris, 1887, 3, s., xiii, 65-77.

Morris, H.: An Address on the Study of Anatomy; British Med. Jour., London, 1895, ii, 1337.

Turner, W.: Address at the Opening of the Anatomical Department in the New Buildings of the University of Edinburgh: Lancet, London, 1880, ii, 724, 759.

Virchow, R.: Morgagni und der anatomische Gedanke; Berlin, Klin. Woch., 1894, xxi, 345-350.

Walton, G. L.: The Study of Anatomy in the Leipzig University; Boston Med. and Surg. Jour., 1882, cvi, 389.

Waldeyer, W.: Wie soll man Anatomie lehren und lernen; Berlin, 1884.

Original Articles.

PARESIS OF THE EXTERNAL RECTI ASSOCIATED WITH IRREGULAR TABES.[*]

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The multiform clinical manifestations which constitute the symptom grouping of so-called locomotor ataxia, are believed by most modern pathologists to be caused by an atrophy or degeneration of the sensory neurons, followed by sclerosis; although as suggested by Berger, Gowers, Oliver and others, this condition is probably preceded by a low grade inflammation.

The varying symptoms, besides those caused by disease of the spinal cord, consist of disturbances of the function of special cerebral nerves, sometimes of the cerebrum and occasionally of the cerebellum.

The medulla oblongata seems to be the connecting link between the spinal and the optic nerve affection. A broad generalization of the ocular symptomatology has recently been presented in a paper by Dr. Charles A. Oliver, as the outcome of a most painstaking series of investigations based upon the study of 100 cases.

The long-recognized pre-ataxic and ataxic divisions, it is thought, should give way to the more scientific initiative or probably inflammatory stage, and later to a degenerative one.

The ocular manifestations, summarized by Swanzy, and previously very thoroughly expounded in the exhaustive treatise of Berger, are as follows: 1, atrophy of the optic nerve; 2, paralysis and ataxia of the orbital muscles; 3, pupilary alterations; 4, paralysis of accommodation; 5, narrowing of the palpebral fissure; 6, imperfect closure of the lids, associated with twitchings in the orbicularis palpebrarum; 7, epiphora; 8, reduction of intra-ocular tension.

It is to the consideration of the second division of symptoms that I will specially call attention.

Paralysis of the ocular muscles occurs in from 20 to 25 per cent. of tabetic cases. They are usually found in the pre-ataxic or inflammatory stage, and not infrequently exist as an initial symptom. Indeed, according to Gowers, in four-fifths of the cases, the paresis constituted an initial symptom. Schmeichler concludes that paresis begins, if it develops at all, with the first symptoms of tabes; at times precedes these by many years, occasionally appears suddenly, but the progress as a rule is a gradual one. After lasting for a few weeks or a few months, it may disappear, not to trouble the patient again perhaps for several years.

The two types of involvement are: the transient paralysis or paresis of a few days or weeks, and the permanent paralysis of one or more muscles. Oscillatory twitching—mostly in a horizontal direction—was first observed by Friedreich, who applied to it the term nystagmus, and thought it an ataxia of the muscles, but since this patronymic is given by ophthalmologists to those clonic spasms of the muscle which appear, even when the patient is looking directly forward, it is clear why they do not mention it or say merely, as did Mauthner, that it is supposed to occur. As to the order of involvement of the muscles, Swanzy notes the externus as the one most affected, next the oculomotor, and next, probably, the levator palpebræ. Woinow and Berger also give the externus the first place, while Erb and Charcot assign it to the oculomotor. In Javal's experience, the levator was most frequently involved and, succeeding this, the internal rectus, the externus and superior oblique being very rarely diseased. Landolt, de Watteville and Von Graefe are in entire accord with Javal in this judgment, and oppose Berger in his statement that paralysis of the internus is comparatively infrequent.

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[*] Presented to the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

In the paretic or paralytic condition, the symptom of special annoyance is the diplopia. The cause of the paresis has been regarded as a vascular disturbance or a slight ependymitis in the nuclear region. It sometimes develops into a chronic ependymitis, with granular hyperplasia. They begin, says Pierret, as nuclear, extend toward the periphery, as descending neuritis, and here continue after the nuclear affection has disappeared.

Dejerine's examinations proved that not all ocular paralyses in tabes are of nuclear origin. The muscle involvement is seldom complete, and is limited usually to one eye. The complete and permanent paralysis of an isolated orbital muscle, occasionally noted in locomotor ataxia, is probably due, according to Swanzy, to a peripheral, rather than to a nuclear disease, but occasionally a well-marked muscular paralysis, affecting a number of muscles, occurs.

It is not possible to diagnose locomotor ataxia with certainty in a patient who shows only ocular symptoms, the diagnosis between this disease and insular sclerosis remaining doubtful until general symptoms develop.

The eye muscles paralyzed in tabes have in themselves nothing absolutely characteristic. The paralysis develops rapidly and usually disappears slowly. In cases of tabes that succeed syphilis, the lesion is not syphilitic in histologic character. In this sort of case, as well as in the type in which syphilis can be excluded, the disease is a degenerative one and rarely influenced by antisyphilitic treatment. It is to be regarded as a degenerative sequel of syphilis, rather than a true syphilitic disease. This view is in accord with the experience of Dr. Mills.

The case which has formed the basis of my brief study of paresis of the external recti, as symptomatic of irregular tabes, has been under observation since Feb. 13, 1897. The period during which organic symptoms of the spinal segments, or more properly, segments of the cerebrospinal system, have been carefully noted, has been two years, the only ocular manifestation having been recurring attacks of paresis of the left external rectus muscle.

The patient is a male, aged 30, with an unusually fine mental equipment, and at his initial visit was in perfect condition physically; married, with one (healthy) child. His mother, at an advanced age, has very severe asthma. The family history is otherwise good and, as bearing on his present condition, negative. At the period of his initial visit vision was reduced to 4/200 in each eye, refraction highly myopic and astigmatic, with huge characteristic crescents, the astigmatism being against the rule. There was no muscular abnormality, excepting an exophoria of .5 degree. With the appropriate correction, the vision equaled 20/25 in each eye.

Fifteen months later—May, 1898—the patient again reported, complaining of numbness of the lips, particularly the upper, with anesthesia of the roof of the mouth, some aching in and over the left eye, apparently more aggravated during periods of constipation, but no paresis of any external eye muscles or other distinctive eye symptoms. There was left hyperphoria of 2 degrees. Four days later the same vertical error and, in addition, an insufficiency of 10 degrees of the externi-esophoria. Three days later the esophoria had increased to 16 degrees, and double images had become almost constant, but distinctly more marked at the close of a busy day, as was also the anesthesia of the roof of the mouth.

Pupilary study, beyond the slightest sluggishness, showed no abnormality. The right knee reflex was slightly diminished, also the left. There was entire absence of any hemorrhage or splotches in the *eye ground, and the form field*—beyond a slight outer contraction—was normal.

Inclined, at this early period, to regard the case as probably specific in origin, I had a consultation with his family physician and friend, Dr. Louis Jurist, who remembered having treated him for a skin rash some years previously, which he regarded as specific. The patient stoutly denied the existence of any such condition, and no other symptoms, *primary or secondary*, were present. At my suggestion he was placed on mercurial inunctions, followed by iodids. At the end of about two months the diplopia had disappeared, but the *remaining* symptoms were about *in statu quo;* the treatment was demoralizing his stomach and intestinal tract, his appetite was very poor and the general languor was pronounced. The *diplopia had disappeared, but, as I now believe, entirely independent of the treatment.*

In September, 1898, there was an esophoria of 10 degrees. In November, 1898, diplopia was again in evidence for a few days, although general symptoms were better, knee-jerks both active, the upper lip moderately anesthetic, the hard palate more sensitive. The potassium iodid was discontinued and salol and bichlorid substituted. The patient now required a prism of 20 degrees, and one week later, a prism of 26 degrees.

Codein, strychnin and quinin were ordered by his general physician, Dr. Jurist. Tabes now seemed to offer the best explanation of the symptomatology. At his visits late in December, 1898, a slight defect in articulation was noted, with some recent shooting pains in the limbs, although these had not been frequent nor of great intensity.

A consultation with Dr. Mills was held early in January, 1899: in addition to the symptoms enumerated above, he examined for the tendon and muscle phenomena in the lower extremities, and found that the knee-jerks were present but slightly sluggish. The tendo-Achillis jerk was, however, absent on both sides. He had not then developed ataxia. The diagnosis of tabes was made, although his knee-jerks were retained, chiefly because the total syndrome could only be explained on this theory. The absent tendo Achillis jerk made Dr. Mills feel that this case was one in which the sacral cord had suffered more than the lumbar segments. From the diagnostic standpoint, the most important cases of tabes are those in which one or more of the well known symptoms like ataxia, lost knee-jerk, or lancinating pains are absent for a shorter or longer time. An important point to bear in mind; in a case like the one under discussion, is the possible development *of general paretic symptoms later in the history of the case.*

Dr. Mills prescribed iodid and hypophosphites. There was some improvement and exacerbation until May, 1899, when the diplopia was again very marked. This time he was placed on iodid of lithium and chlorid of gold and sodium. Because of disturbed digestion, the iodid had to be stopped, and the gold and sodium retained with a gratifying improvement in the diplopia, the esophoria in June being reduced to 6 degrees at 6 m.

In July, 1899, he was able to use his bicycle with comfort, his appetite was improved, he gained 10 pounds, and there was no doubling unless tired at night—esophoria, 5 degrees.

In the early fall, diplopia was again in evidence, convergence became very marked, anesthesia and numbness of the lips and palate increased, with a number of laryngeal crises, and a further study of the deep reflexes of the lower extremities, ankle and foot showed their entire absence.

A rest in the South for three months resulted in a further removal of the diplopia, and the general condition, up to the past February, *remained unchanged.*

In March the patient sailed for a year's trip abroad. He was desperately seasick while crossing, and wrote me from Heidelberg that the diplopia had again recurred.

The following points are especially noteworthy in connection with the study of the case I have cited: 1. In a period of two years, absolutely the only ocular manifestation was a series of paretic attacks of the left external rectus muscle, the duration of the paresis varying from a few weeks to about three months. 2. The retention, during almost the entire period of observation, of the knee-jerks. 3. The existence of various foci of degeneration, as especially illustrated in the comparatively early involvement of the sacral cord and the consequent loss of the deep reflexes of the lower extremities; the paretic ocular muscle, the numbness, the laryngeal crises. 4. Although a specific history was thought to be present, the antisyphilitic treatment was quite nugatory or possibly damaging, for the reason previously stated. 5. The therapy, aside from the stomach and intestinal requirements, that gave the best, although but palliative result, was chlorid of gold and sodium.

DISCUSSION.

DR. S. D. RISLEY, Philadelphia—Dr. Ring has honored me with a request to open the discussion on this very important topic, but I can not, in the very few moments allowed, enter into any extensive general consideration of tabes. A few years ago, through the courtesy of friends, I went through several general hospitals in Philadelphia and studied the ocular conditions in every case of tabes I could find. The result of those studies, I am sorry to say now, were never published, but left a very pronounced impression upon my own mind. In the first place, a very large proportion showed a greyness of the outer halves of the optic nerves, but in many instances this was not present until late in the disease. Another point that impressed itself on my mind was the abnormalities of ocular motility, which often came on very early in the disease. It is generally said that these ocular paralyses are transient. That is certainly so in a large number of cases, but there is a group like the one presented to-day in which it is not transient. I have never seen a case in which the external recti were involved that the paresis proved to be transient. The transient cases of paralysis were always of one of the vertically acting muscles or of the internal recti. The paralysis is often quite transient, lasting but a few hours or days. In this connection I recall the case of an eloquent clergyman who was to have been one of the speakers at the dedication of the Bartholdi fountain at the Centennial Exposition in Philadelphia, in 1876. He was sitting on the platform awaiting his turn to speak, when he suddenly became nauseated and giddy, and was compelled to leave the platform. He thought it was due to the heat, but from his lucid statement it appeared to be a plain case of diplopia due to a transient palsy of the internal rectus. The symptoms disappeared after a few hours, but occasionally afterward, he was annoyed by brief periods of disturbed vision which he learned to know were due to impaired muscular balance. I did not see him until 1881, when he was sent to me by the late Dr. William Pepper, because of this disturbance of vision. He then had, in the left eye, an absolute macular scotoma with a contracted field, and a distinctly grey outer half of the nerve. The patellar reflexes were impaired, but station was good. The disease slowly progressed until there was total atrophy of the optic nerve, and no perception of light. The right eye was healthy and vision normal; no contraction of the field and no scotoma. Perhaps six years later he came complaining of trouble with the other eye. I found here also a macular scotoma with the same appearances about the disc, and this also passed to complete blindness. His gait was now ataxic and he died a few years ago, twenty years after the transient attack of diplopia and fifteen after the commencing atrophy of the optic nerve on the left side, having been confined to his room for many years. The initial symptom in this case occurred in 1876, and for ten years afterward he pursued his professional calling and was called on for many public addresses besides, while during those ten years he could not be made to believe he was in any sense ill.

I wish to allude to one other point concerning the treatment. For many years I have been using bichlorid of mercury in these cases. I have one man who has been under my care since 1884, a novelist who has followed his calling without interruption, and is now, in addition, the editor of a literary publication, and has for sixteen years taken bichlorid of mercury internally, in doses anywhere from 1/100 gr. three or four times a day to 1/24 or even 1/12 gr., he regulating the doses himself up to the point of relief from the lightning pains. His reflexes are absent, his station impaired but variable, but at no time has he manifested any disturbances of ocular motility. He came under observation in 1884 for impaired vision. There was a central scotoma for red and some concentric contraction of the fields. He was an excessive smoker and the victim of irregular habits culminating in an occasional spree. When made to comprehend his danger, he corrected his habits in great measure, but the tabetic symptoms slowly advanced. The relief from pain secured by the corrosive sublimate is of great interest. The etiology, as we know, is obscure, but most observers regard it as due to syphilis. In one case under my care for about ten years, with paralysis of the externus, the patient believed that his disease was due to excessive venery. How correct his own view in this case was I do not know, but it was his firm conviction.

DR. JOHN E. WEEKS, New York City—I would like to suggest that in all probability this particular salt of mercury is not necessarily the only one that will produce amelioration of the painful symptoms in tabes, but that mercury in ointment, the simple metallic mercury, is sufficient in many cases. I have reference particularly to a case recently under observation, in which inunctions were used very frely, the patient being kept at the point of saturation for some time; the relief of pain, as well as the improvement in his general condition was extremely marked. The idea that tabes is a disease due to an affection of the peripheral neurons is perhaps completely established at the present time: the atrophy of the optic nerve is secondary to degeneration of the ganglion cells in the retina.

DR. L. WEBSTER FOX, Philadelphia—A man I had under observation some time ago, who had gone the rounds of the hospitals, told me the only relief he got was from excessive doses of whisky. I do not wish to encourage the drinking of whisky in such cases, but only mention this as one of the many remedies that have been applied to these cases.

DR. RING—Dr. Fox's suggestion confirms my opinion that some of these cases, even though they are specific, do not get relief from the use of antisyphilitic treatment, the lesion being rather a degenerative sequence of syphilis. It may be of interest, in closing, to note, from a letter I received from this patient the day before I left Philadelphia, that the patient has had another recurrence of the diplopia following a severe voyage and desperate seasickness.

THE AMOUNT OF MYOPIA CORRECTED BY REMOVAL OF THE CRYSTALLINE LENS.*

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Despite the hundreds of reported cases, great uncertainty still remains as to the exact optical effect produced by removing the clear crystalline lens from a highly myopic eye. The great mass of these cases are so reported as not to throw any definite light on the optical questions involved. To point out what is our present knowledge of the subject, and to urge the reporting of more exact data regarding future cases are the purposes of this paper.

Myopia due to Excessive Corneal Curvature.—If a high myopia were due solely to excessive curvature of the cornea—the anteroposterior length of the eyeball and the refractive power of the lens being no greater than in the average emmetropic eye—the removal of the crystalline lens would cause substantially the same optical effect as it would in the emmetropic eye; that is, about 11 D. of change as measured at the cornea; or 12 to 13 D. as measured by a concave lens placed in the usual position for spectacle lenses.

Myopia due to Excessive Refractive Influence of Lens.—With a myopia due solely to the excessive refracwhy they do not mention it or say merely, as did Mauthner, that it is supposed to occur. As to the order of involvement of the muscles, Swanzy notes the externus as the one most affected, next the oculomotor, and next, probably, the levator palpebræ. Woinow and Berger also give the externus the first place, while Erb and Charcot assign it to the oculomotor. In Javal's experience, the levator was most frequently involved and, succeeding this, the internal rectus, the externus and superior oblique being very rarely diseased. Landolt, de Watteville and Von Graefe are in entire accord with Javal in this judgment, and oppose Berger in his statement that paralysis of the internus is comparatively infrequent.

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Dejerine's examinations proved that not all ocular paralyses in tabes are of nuclear origin. The muscle involvement is seldom complete, and is limited usually to one eye. The complete and permanent paralysis of an isolated orbital muscle, occasionally noted in locomotor ataxia, is probably due, according to Swanzy, to a peripheral, rather than to a nuclear disease, but occasionally a well-marked muscular paralysis, affecting a number of muscles, occurs.

It is not possible to diagnose locomotor ataxia with certainty in a patient who shows only ocular symptoms, the diagnosis between this disease and insular sclerosis remaining doubtful until general symptoms develop.

The eye muscles paralyzed in tabes have in themselves nothing absolutely characteristic. The paralysis develops rapidly and usually disappears slowly. In cases of tabes that succeed syphilis, the lesion is not syphilitic in histologic character. In this sort of case, as well as in the type in which syphilis can be excluded, the disease is a degenerative one and rarely influenced by antisyphilitic treatment. It is to be regarded as a degenerative sequel of syphilis, rather than a true syphilitic disease. This view is in accord with the experience of Dr. Mills.

The case which has formed the basis of my brief study of paresis of the external recti, as symptomatic of irregular tabes, has been under observation since Feb. 13, 1897. The period during which organic symptoms of the spinal segments, or more properly, segments of the cerebrospinal system, have been carefully noted, has been two years, the only ocular manifestation having been recurring attacks of paresis of the left external rectus muscle.

The patient is a male, aged 30, with an unusually fine mental equipment, and at his initial visit was in perfect condition physically; married, with one (healthy) child. His mother, at an advanced age, has very severe asthma. The family history is otherwise good and, as bearing on his present condition, negative. At the period of his initial visit vision was reduced to 4/200 in each eye, refraction highly myopic and astigmatic, with huge characteristic crescents, the astigmatism being against the rule. There was no muscular abnormality, excepting an exophoria of .5 degree. With the appropriate correction, the vision equaled 20/25 in each eye.

Fifteen months later—May, 1898—the patient again reported, complaining of numbness of the lips, particularly the upper, with anesthesia of the roof of the mouth, some aching in and over the left eye, apparently more aggravated during periods of constipation, but no paresis of any external eye muscles or other distinctive eye symptoms. There was left hyperphoria of 2 degrees. Four days later the same vertical error and, in addition, an insufficiency of 10 degrees of the externi-esophoria. Three days later the esophoria had increased to 16 degrees, and double images had become almost constant, but distinctly more marked at the close of a busy day, as was also the anesthesia of the roof of the mouth.

Pupilary study, beyond the slightest sluggishness, showed no abnormality. The right knee reflex was slightly diminished, also the left. There was entire absence of any hemorrhage or splotches in the eye ground, and the form field—beyond a slight outer contraction—was normal.

Inclined, at this early period, to regard the case as probably specific in origin, I had a consultation with his family physician and friend, Dr. Louis Jurist, who remembered having treated him for a skin rash some years previously, which he regarded as specific. The patient stoutly denied the existence of any such condition, and no other symptoms, primary or secondary, were present. At my suggestion he was placed on mercurial inunctions, followed by iodids. At the end of about two months the diplopia had disappeared, but the remaining symptoms were about *in statu quo;* the treatment was demoralizing his stomach and intestinal tract, his appetite was very poor and the general languor was pronounced. The diplopia had disappeared, but, as I now believe, entirely independent of the treatment.

In September, 1898, there was an esophoria of 10 degrees. In November, 1898, diplopia was again in evidence for a few days, although general symptoms were better, knee-jerks both active, the upper lip moderately anesthetic, the hard palate more sensitive. The potassium iodid was discontinued and salol and bichlorid substituted. The patient now required a prism of 20 degrees, and one week later, a prism of 26 degrees.

Codein, strychnin and quinin were ordered by his general physician, Dr. Jurist. Tabes now seemed to offer the best explanation of the symptomatology. At his visits late in December, 1898, a slight defect in articulation was noted, with some recent shooting pains in the limbs, although these had not been frequent nor of great intensity.

A consultation with Dr. Mills was held early in January, 1899: in addition to the symptoms enumerated above, he examined for the tendon and muscle phenomena in the lower extremities, and found that the knee-jerks were present but slightly sluggish. The tendo-Achillis jerk was, however, absent on both sides. He had not then developed ataxia. The diagnosis of tabes was made, although his knee-jerks were retained, chiefly because the total syndrome could only be explained on this theory. The absent tendo Achillis jerk made Dr. Mills feel that this case was one in which the sacral cord had suffered more than the lumbar segments. From the diagnostic standpoint, the most important cases of tabes are those in which one or more of the well known symptoms like ataxia, lost knee-jerk, or lancinating pains are absent for a shorter or longer time. An important point to bear in mind, in a case like the one under discussion, is the possible development of general paretic symptoms later in the history of the case.

Dr. Mills prescribed iodid and hypophosphites. There was some improvement and exacerbation until May, 1899, when the diplopia was again very marked. This time he was placed on iodid of lithium and chlorid of gold and sodium. Because of disturbed digestion, the iodid had to be stopped, and the gold and sodium retained with a gratifying improvement in the diplopia, the esophoria in June being reduced to 6 degrees at 6 m.

In July, 1899, he was able to use his bicycle with comfort, his appetite was improved, he gained 10 pounds, and there was no doubling unless tired at night—esophoria, 5 degrees.

In the early fall, diplopia was again in evidence, convergence became very marked, anesthesia and numbness of the lips and palate increased, with a number of laryngeal crises, and a further study of the deep reflexes of the lower extremities, ankle and foot showed their entire absence.

A rest in the South for three months resulted in a further removal of the diplopia, and the general condition, up to the past February, remained unchanged.

In March the patient sailed for a year's trip abroad. He was desperately seasick while crossing, and wrote me from Heidelberg that the diplopia had again recurred.

The following points are especially noteworthy in connection with the study of the case I have cited: 1. In a period of two years, absolutely the only ocular manifestation was a series of paretic attacks of the left external rectus muscle, the duration of the paresis varying from a few weeks to about three months. 2. The retention, during almost the entire period of observation, of the knee-jerks. 3. The existence of various foci of degeneration, as especially illustrated in the comparatively early involvement of the sacral cord and the consequent loss of the deep reflexes of the lower extremities; the paretic ocular muscle, the numbness, the laryngeal crises. 4. Although a specific history was thought to be present, the antisyphilitic treatment was quite nugatory or possibly damaging, for the reason previously stated. 5. The therapy, aside from the stomach and intestinal requirements, that gave the best, although but palliative result, was chlorid of gold and sodium.

DISCUSSION.

Dr. S. D. Risley, Philadelphia—Dr. Ring has honored me with a request to open the discussion on this very important topic, but I can not, in the very few moments allowed, enter into any extensive general consideration of tabes. A few years ago, through the courtesy of friends, I went through several general hospitals in Philadelphia and studied the ocular conditions in every case of tabes I could find. The result of those studies, I am sorry to say now, were never published, but left a very pronounced impression upon my own mind. In the first place, a very large proportion showed a greyness of the outer halves of the optic nerves, but in many instances this was not present until late in the disease. Another point that impressed itself on my mind was the abnormalities of ocular motility, which often came on very early in the disease. It is generally said that these ocular paralyses are transient. That is certainly so in a large number of cases, but there is a group like the one presented to-day in which it is not transient. I have never seen a case in which the external recti were involved that the paresis proved to be transient. The transient cases of paralysis were always of one of the vertically acting muscles or of the internal recti. The paralysis is often quite transient, lasting but a few hours or days. In this connection I recall the case of an eloquent clergyman who was to have been one of the speakers at the dedication of the Bartholdi fountain at the Centennial Exposition in Philadelphia, in 1876. He was sitting on the platform awaiting his turn to speak, when he suddenly became nauseated and giddy, and was compelled to leave the platform. He thought it was due to the heat, but from his lucid statement it appeared to be a plain case of diplopia due to a transient palsy of the internal rectus. The symptoms disappeared after a few hours, but occasionally afterward, he was annoyed by brief periods of disturbed vision which he learned to know were due to impaired muscular balance. I did not see him until 1881, when he was sent to me by the late Dr. William Pepper, because of this disturbance of vision. He then had, in the left eye, an absolute macular scotoma with a contracted field, and a distinctly grey outer half of the nerve. The patellar reflexes were impaired, but station was good. The disease slowly progressed until there was total atrophy of the optic nerve, and no perception of light. The right eye was healthy and vision normal; no contraction of the field and no scotoma. Perhaps six years later he came complaining of trouble with the other eye. I found here also a macular scotoma with the same appearances about the disc, and this also passed to complete blindness. His gait was now ataxic and he died a few years ago, twenty years after the transient attack of diplopia and fifteen after the commencing atrophy of the optic nerve on the left side, having been confined to his room for many years. The initial symptom in this case occurred in 1876, and for ten years afterward he pursued his professional calling and was called on for many public addresses besides, while during those ten years he could not be made to believe he was in any sense ill.

I wish to allude to one other point concerning the treatment. For many years I have been using bichlorid of mercury in these cases. I have one man who has been under my care since 1884, a novelist who has followed his calling without interruption, and is now, in addition, the editor of a literary publication, and has for sixteen years taken bichlorid of mercury internally, in doses anywhere from 1/100 gr. three or four times a day to 1/24 or even 1/12 gr., he regulating the doses himself up to the point of relief from the lightning pains. His reflexes are absent, his station impaired but variable, but at no time has he manifested any disturbances of ocular motility. He came under observation in 1884 for impaired vision. There was a central scotoma for red and some concentric contraction of the fields. He was an excessive smoker and the victim of irregular habits culminating in an occasional spree. When made to comprehend his danger, he corrected his habits in great measure, but the tabetic symptoms slowly advanced. The relief from pain secured by the corrosive sublimate is of great interest. The etiology, as we know, is obscure, but most observers regard it as due to syphilis. In one case under my care for about ten years, with paralysis of the externus, the patient believed that his disease was due to excessive venery. How correct his own view in this case was I do not know, but it was his firm conviction.

Dr. John E. Weeks, New York City—I would like to suggest that in all probability this particular salt of mercury is not necessarily the only one that will produce amelioration of the painful symptoms in tabes, but that mercury in ointment, the simple metallic mercury, is sufficient in many cases. I have reference particularly to a case recently under observation, in which inunctions were used very frely, the patient being kept at the point of saturation for some time; the relief of pain, as well as the improvement in his general condition was extremely marked. The idea that tabes is a disease due to an affection of the peripheral neurons is perhaps completely established at the present time: the atrophy of the optic nerve is secondary to degeneration of the ganglion cells in the retina.

Dr. L. Webster Fox, Philadelphia—A man I had under observation some time ago, who had gone the rounds of the hospitals; told me the only relief he got was from excessive doses of whisky. I do not wish to encourage the drinking of whisky in such cases, but only mention this as one of the many remedies that have been applied to these cases.

Dr. Ring—Dr. Fox's suggestion confirms my opinion that some of these cases, even though they are specific, do not get relief from the use of antisyphilitic treatment, the lesion being rather a degenerative sequence of syphilis. It may be of interest, in closing, to note, from a letter I received from this patient the day before I left Philadelphia, that the patient has had another recurrence of the diplopia following a severe voyage and desperate seasickness.

THE AMOUNT OF MYOPIA CORRECTED BY REMOVAL OF THE CRYSTALLINE LENS.*

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Despite the hundreds of reported cases, great uncertainty still remains as to the exact optical effect produced by removing the clear crystalline lens from a highly myopic eye. The great mass of these cases are so reported as not to throw any definite light on the optical questions involved. To point out what is our present knowledge of the subject, and to urge the reporting of more exact data regarding future cases are the purposes of this paper.

Myopia due to Excessive Corneal Curvature.—If a high myopia were due solely to excessive curvature of the cornea—the anteroposterior length of the eyeball and the refractive power of the lens being no greater than in the average emmetropic eye—the removal of the crystalline lens would cause substantially the same optical effect as it would in the emmetropic eye; that is, about 11 D. of change as measured at the cornea; or 12 to 13 D. as measured by a concave lens placed in the usual position for spectacle lenses.

Myopia due to Excessive Refractive Influence of Lens.—With a myopia due solely to the excessive refractive influence of the lens, whether from excessive curvature, high refractive index, displacement of the lens forward or all of these combined—the corneal curvature and anteroposterior axis remaining the same as for the emmetropic eye—the eye after removal of the lens would possess the same refraction as would a previously emmetropic eye after removal of the lens; that is, whatever the amount of previous myopia, the eye would be left hyperopic about 11 D. measured at the cornea, and would require for its correction a convex 10 D. lens placed in the usual position.

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Myopia due to Increased Length of Axis.—When myopia is due to increased length of the anteroposterior axis of the eyeball, the optical effect of removal of the crystalline lens, as measured in diopters, either at the cornea or at the usual position for correcting lenses, increases directly with the increase of the axis. The higher the myopia the greater the effect of removal of the crystalline lens. Yet as to the amount of myopia that should be just corrected by removal of the crystalline lens, as to the previous refraction of the eye which when rendered aphakic will become emmetropic, different writers are widely at variance.

My own approximate estimate[1] by means of the "dioptric eye," was 18 D.; Hirschberg's, by the rule[2] of finding the correction after operation, by subtracting half the myopia from + 10 D., is 20 D.; Otto's,[3] by calculation, 20.08; Hirschberg's, by calculation, 21; Weiland's,[4] by approximate calculation, 25.61; Percival's[5], by calculation, 25.85; Weiland's, by accurate calculation, 25.952. The last three are based on the schematic eye of Listing, with the dimensions assigned to it by Helmholtz, generally regarded as the most exact conception of the average refraction of the human eye.

Let us contrast the theoretic possibilities of the case. The myopia of an eye that will be rendered emmetropic by removal of the crystalline lens will be: For myopia due to corneal curvature, 13 D.; for axial myopia, 26 D.; for lens myopia of any amount the eye will never be left emmetropic, but will be made hyperopic, 10 D.

Finally we must compare with these theoretic possibilities the effects reported of removal of the crystalline lens in actual cases; although it must be noted that the majority of these reports show, upon the very face, that they are loose and inaccurate. Very few of them are based on full and carefully determined data. In not a half dozen cases out of the whole series are measurements of the corneal curvature mentioned. Cross[7] calls attention to the uncertainties attending determinations of high myopia by the common subjective methods, and states that he used skiascopy in some of his 48 cases. In only 3 out of 114 did Deutschman recognize any astigmatism prior to operation. Of course looseness and inaccuracy in the determination of the myopia before operating, greatly diminishes the value of such statistics; and absence of measurements of the corneal curvature makes them worthless for certain important purposes.

Still, it is worth while to compare these recorded results with those of theoretic investigations. I have tabulated the recorded results of 296 cases. The first column gives the diopters of myopia before operation; the second gives the theoretical change to be expected for axial myopia, according to Eperon,[8] the third gives the average change observed; the fourth the maximum and the fifth the minimum change reported; and the sixth column gives the number of cases of each degree of myopia included. The diopters of myopia or of change are averages of the two principal meridians, where astigmatism is reported.

Previous Myopia.	Theoretic Change.	Average Change.	Maximum Change.	Minimum Change.	Number of Cases.
10	14	16.60	19	15	5
11	14.64	16.67	19	13	6
12	15.2	16	18.50	14	12
13	15.67	17.2	19	15.5	24
14	16.3	17.14	19.50	14	37
15	17	17.15	21	12	28
16	17.5	17.70	24.50	13	58
17	18.23	19	22	16	14
18	18.8	19	24	15	38
19	19.36	18.50	20	16	6
20	20.10	19.81	24	16	32
21	.....	20.20	20	19	5
22	21.4	21.25	25.5	18	15
23	.....	21.67	26	19.5	6
24	.....	22.40	24	21	3
25	.....	23	23	23	1
26	.....	23	23	23	2
30	.....	27	28.5	26	3
35	.....	29	29	29	1

It is obvious that the number of cases on which the above table is based is insufficient to furnish accurate and reliable averages. Still, the table may be taken to indicate about what those averages will be. And it does bring out with certainty the wide range between the maximum and minimum effects that may be produced. Added numbers of cases can only separate the maximum and minimum more widely.

We must conclude from this table, that for a given amount of myopia the effect of removal of the crystalline lens may vary 10 D. or more. Such a variation is too great and too common to be explained as mere inaccuracy of observation. While the general trend of the figures indicate that a lengthened anteroposterior axis is the most important cause of very high myopia, variations of corneal curvature, or of lens refraction, or of both, are factors of practical importance. We never can predict with exactness the effect of an operation until these are taken into account.

One other point is that the calculations based on the Helmholtz values of the schematic eye indicate that 25 or 26 D. of axial myopia should be corrected by removal of the crystalline lens. The reported cases indicate about 20 D. Clearly, either the high myopias are usually partly curvature myopias, or some of the values assigned to the schematic eye are at fault. The careful measurement of the corneal curves in each case, both before and after operation, with the accurate determination of the refraction at both times, would go far toward settling this question.

After lens extraction the curves of the cornea, as measured by the ophthalmometer, continue to change for several weeks or months. It is the permanent form of the cornea that is of interest in this connection; and we can not set any definite time when the changes will cease. Still, after six months the change is slight, and after a year will rarely be of any importance. Some such time must be allowed to elapse before any reliable evidence can be afforded by a given case, as to the influence of the operation in checking the tendency of myopia to increase or in bringing about a decrease.

In all cases of lens extraction through a large corneal incision, there is for a time a bulging of the cornea causing temporary increase in the anteroposterior axis of the eyeball. This gradually diminishes with corresponding diminution in the refraction of the eye. This occurrence, which is a common sequel of such operations, seems not to have been taken into account in the reported cases. It is the probable explanation of the claim that removal of the crystalline lens tends to cause subsequent shortening of the anteroposterior axis.

In conclusion, let me urge both for the good of the individual patient, and for the advancement of our knowledge of the refraction of the eye, and of this operation, the more complete and exact study of the ocular refraction and the curvature of the cornea, both before and after the removal of the crystalline lens for high myopia.

BIBLIOGRAPHY.

1. Ophthalmic Record, February, 1898.
2. Centralblatt f. Praktische-Augenheilk., March, 1897.
3. Graefe's Archiv, 1897, vol. xliii.
4. Annals of Ophthalmology, July, 1899.
5. Archives of Ophthalmology, January, 1897.
6. Ibid., October, 1899.
8. Lancet, July 1, 1899.
9. Quoted by Cross.

ON CERTAIN CLINICAL FEATURES OF EPIDEMIC INFLUENZA.*

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In its symptomatic manifestations influenza is the hysteria of epidemic disease. Its puzzling obscurities, unique development, grotesque variations, distressing complications, and surprising sequels, make it paradoxically a type of the atypical in the class of infectious diseases, as is its functional analogue among the neuroses. No tissue seems too hidden; no structure, too strong; no function, too staple; no organ, too resistant, nor organism too robust to escape its Briarean grip.

This introductory arraignment is not stated as a proposition for subsequent proof—that is hardly necessary in the presence of practitioners, most of whom have already made a similar induction—but simply as a potential head from which the octopus-like tentacles grow, reach out, suck and sap their victims in the many ways more specifically referred to in what follows. My observations and deductions are based upon an analysis of 128 cases of influenza.

Onset.—The type of onset most frequently met with in the epidemic just passed was a combination of the cerebrospinal and respiratory forms; for the first two or three days, however, the symptoms of the former element predominated over those of the latter. In cases characterized by severe head, back and limb pains, prostration was extreme for from five to seven days; while those in which the dry bronchial cough was most distressing were not nearly so prostrated; indeed, many such did not feel ill enough to remain in bed more than one or two days, if at all.

A special feature in the onset of a great number of cases was the early appearance of congestion and suffusion of the conjunctivæ, a feature which, it will be recollected, was very distinctive about the third week of December, 1889, when the first cases of the great pandemic then beginning here were rapidly increasing in number.

Fever.—The mild cases showed little or no rise in temperature; and in the cases of severe suffering the temperature rose above 103, and that only during the first two or three days of the disease; in two uncomplicated cases only did the fever reach 105, each case representing an extreme of life, one having occurred in a 14-month infant, and the other in a woman of 72 years. The fever declined usually by a rapid lysis lasting two or three days. Continued fever for ten days was observed in one case. Subnormal temperature was frequent during convalescence, associated with bradycardia. In several instances the thermometer registered a daily remission ranging between 95.4 and 97 for nearly a week.

Cerebrospinal System.—Of the 128 cases, 6 were affected with such specially severe pains in the loin nerves and muscles as to indicate a true lumbago, although general pains and aching were also present. Pain and soreness of the sternocleidomastoid and other neck muscles were frequently noticed in connection with influenzal sore throat. Cephalalgia of intense type was present in 7 cases, the pains having been of a constant, severe, throbbing nature, with occasional sharp neuralgic darts, particularly through the temples. In a few cases marked nuchal pains, similar to those of a malarial paroxysm, were met with. One woman suffered greatly for nearly forty-eight hours from burning pains in the front and outside of the left thigh. There were 9 cases of influenza characterized by special involvement of one or more intercostal nerves, principally around the lower half of the chest. So prominent were the pains here that one felt almost sure that pleuritis must be present, until careful physical examination and closer study of the behavior of the pains and of the course of the case gave negative results in that direction. Enteralgia was marked in one case. In this connection Franke[1] mentions having met with peripheral neuritis of the intercostal and abdominal nerves simulating pleuritis, pericarditis, gastric ulcer and appendicitis. He refers also to the occurrence of pain and tenderness on the sole of the foot in some recent cases of "grip," due to ostitis of the tarsal and metatarsal bones, or to inflammation of the plantar fascia. Not one of my cases was so affected. However, in a case of neuritis affecting the plantar nerves of the left foot, which, for a time, closely simulated metatarsalgia or Morton's painful affection of the foot, the moderate pain, tenderness and disability beginning early in December, 1899, became particularly severe and intractable during the height of the influenza epidemic in March and April last; since that time rapid subsidence of the symptoms has taken place. This case was both rheumatic and traumatic in origin, having resulted from a strained position of the foot on damp ground while playing golf, the patient having a history of rheumatic sciatica and myositis. In 3 instances otalgia was a marked symptom; in one case facial neuralgia on the left side was the prominent feature for the first two days of the "grip" attack. Only one case manifested extreme mental disorder; this took the form of an acute maniacal delirium lasting nearly three weeks. The patient, a woman aged 50, was stubbornly deluded with the idea that she would die, even when much improved physically, saying often day and night, "I'll never get well; I'll never get well." She was passing through the menopause, had suffered somewhat from insomnia and gastrointestinal indigestion with flatulence, and had an unfavorable family history; an uncle and two brothers had died insane, and another brother is on the verge of insanity with alcoholism. The patient's previous mental and physical balance and health—before the climacteric—was excellent, and at this writing—June 4, 1900—her equanimity is nearly restored. Spitzly[2] reported a case of maniacal excitement which began on the fourth day of an influenzal attack and lasted nearly a week, ending in complete recovery.

Conjunctivitis.—As mentioned before, this was a frequent concomitant of the influenza epidemic and, as well, early in the attack of a number of cases. In 13 I found the hyperemic and watery membranes and eye-lids markedly affected, besides 4 cases in which suppuration had set in. The most severe case of purulent conjunctivitis occurred in a retired merchant aged 72, who had been afflicted with chronic articular gout for about twelve years; a purulent bronchopneumonia was also associated with the influenza attack.

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Otitis Media Purulenta.—This was present in 2 cases: in one it appeared five days after the onset in an infant having a severe bronchitis at the same time; in the other, in a medical student, it terminated an attack of influenza which began one week after a sharp attack of follicular tonsillitis had subsided.

Faucial, Tonsillar and Pharyngeal Inflammation.—A great many cases of influenza began with moderate coryza and faucial or pharyngeal soreness. In fact, faucial redness was found to be an early objective symptom of considerable constancy and value in the diagnosis. In 12 cases only was there distinctly marked tonsillar inflammation—not follicular—associated with the acute stage of the disease.

Respiratory System.—Laryngitis was a prominent manifestation of la grippe in 7 of my cases. There was little or no fever at any time; and the general aching and depression were seldom present to a degree that required a stay in bed longer than one day. The onset was characterized by sudden huskiness of the voice, and, within twenty-four hours, speaking became a mere wheezy whisper. It may be worthy of special record that, by stethoscopic auscultation over the thyroid cartilages of the larynx, in every case, one or two high-pitched dry or sibilant râles were heard, and during expiration only. In one case of influenzal laryngitis the nervous depression, although slight, lasted a little over three weeks.

Bronchitis was more or less common in nearly all of the cases, but I have noted 23 in which this was especially severe. And yet, the almost total and continued absence of any physical sign—any interrupted respiratory murmur or dry or moist bronchial râles—makes one hesitate to call the cause of the distressing, irritating, and exhausting coughs and substernal sense of tightness and oppression a real bronchitis. Indeed, it seemed that the cough was due rather to bronchial nerve irritation—in view of the selective affinity for nervous tissue by the active bacilli or toxins of this disease—or to congestion of the mucous membrane, with scanty, tough exudation, if any at all.

Marked dyspnea was a feature in several cases without, however, any symptomatic or physical evidences of cardiac, pulmonary or renal complications to account for it; and hence the inference that it was purely nervous in origin is probably a fairly true one.

Bronchopneumonitis was associated with influenza in 5 cases, having developed within six or seven days after the first symptom of the "grip" attack. The only physical signs of diagnostic value were those elicited by auscultation; especially in children were palpation and percussion of no service, because of the thin, elastic chest-walls and normally exaggerated resonance as compared with adults, so that any relative dulness that the small area of catarrhal consolidation might produce was practically eclipsed by the surrounding resonance rendered all the deeper and louder in tone by the tympanitic quality resulting from the adjacent relaxed and congested lung tissue. One case, in a very old man of gouty habit, with a patch of consolidation about the size of a small orange below the left scapula, terminated in an abscess and final healing. Soft pleural friction sounds were heard over the area. Thick greenish-yellow pus was expectorated freely for two weeks.

Dry pleuritis over small areas in the postero-axillary region was associated with 5 cases of influenza. In 4 cases of pulmonary tuberculosis, the dry pleuritis over the seats of consolidation was distinctly aggravated, as regards pain, cough and pleural crepitation, during superadded attacks of la grippe.

Gastrointestinal System.—Anorexia was common in most cases, but in 4 instances the depression of function was so extreme as to be really quite distressing for two or three weeks. The tongue was heavily coated and flabby, as in cases of chronic gastric catarrh, and while nausea and vomiting were absent, the aversion to all food of even the most delicate and appetizing preparations and service was so extreme as to necessitate rectal feeding for a while. In 3 cases—all women—the attack of influenza produced such nervous irritability of the gullet and stomach that the taking of liquid, soft or solid food, gave rise to immediate painful oppression and efforts at eructation or regurgitation back of the precordial and epigastric regions, due most likely to cardiospasm and pyloro-spasm. Flatulence and sluggishness of the bowels were present in a few cases otherwise normal in function. In 2 instances deficiency of liver action was pronounced, as shown in pasty, clay-colored stools, although jaundice was not evident.

Cardiovascular System.—In 3 severe or fulminant cases, two of which were in children, acute dilatation of the heart[3] was demonstrable by percussion, with diffuse, tumultuous ventricular impulse, and soft, short, systolic, blowing murmurs of relative insufficiency at the auriculo-ventricular orifices. These physical signs disappeared completely in convalescence. Tachycardia, with a pulse-rate of 142, though not much out of ratio with the temperature, namely, 105 F., occurred in a woman of 74 years of age. Bradycardia, however, was a remarkably frequent accompaniment of influenza recently during the convalescent period. This was especially noted in 13 cases, all adults with the exception of a girl of 11 years, who had a very mild attack; after defervesence, which occurred the third day, her pulse-rate varied between 56 and 65 for several days. In the other instances, abnormally infrequent pulse-rates varying between 44 and 60, and lasting from three to seven days was the usual occurrence. Nervous depression and subnormal temperature were often associated, as observed also by Byrne.[4] From confirmatory conversations with a number of practitioners it would seem that bradycardia during convalescence has been a marked feature in recent cases of influenza. Painful, excessive throbbing of the abdominal aorta was a prominent symptom in one young woman of hysterical tendency.

Vasomotor disturbance, in the form of greatly exaggerated and depressing flushes, was a feature throughout the course of the attack in three women passing through the climacteric. The pulse was peculiarly irregular as to rhythm and volume, along with occasional intermittency and persistent compressibility in 7 cases convalescing from "grip."

Influenzal Nephritis.—There were 2 cases of acute nephritis, from the causation of which everything could be excluded except influenza. Both patients were males: one aged 38, the other 18 years—seen with Dr. T. V. Crandall. The former had had a chancre, and had been a heavy drinker of alcoholics. The onset in both cases was sudden and characterized by the general pains and febrile disturbances so common, followed, in a few days, by a puffiness of beginning dropsy. Albuminuria was copious, one-third by volume in the older man, and a trifle over one-half in the other; the tube-casts were more abundant in the urine of the younger man, and were covered with renal cells and leucocytes, but later became granular. The older—syphilitic—patient died in uremic delirium; the younger had extreme anasarca, but is now on a fair way to recovery, with free urine of 1018 sp. gr., only an occasional cast and, as yet, no distinct cardiovascular changes.

Herpes labialis was observed in 30 per cent. of the cases; but no skin eruptions similar to scarlatina or measles, as reported by Herman,[3] were witnessed by me.

Complications.—There were 2 cases of influenza which, during the decline of the fever, but before the normal was reached, were complicated with lobar pneumonitis, one in the right, the other in the left lower lobes, with pronounced pleuritis at the same time. Both cases ended in pulmonary abscesses. One patient was a boilermaker, recovering in three weeks; the other was a colored sexton with a tubercular family history, and is now—June 4—in his fourth week of typhoid fever with the abscess cavity gravely retarding his chances of recovery.

Nephritis as a complication occurred in one case, a young schoolmistress, while suffering from a recurrent and fatal attack of "grip" during the second week of April. Her first attack, from which she recovered fairly well, lasted throughout the last week in January and the first two weeks in February, and was complicated also with extensive right-sided fibrinous pleuritis. It should be stated, too, that she had had chronic rheumatic endocarditis with mitral insufficiency and cardiac hypertrophy for twelve years.

Peripheral neuritis complicated 6 cases; in 2 the shoulder was affected. There were occasional burning pains, increased on motion of the deltoid and triceps, felt in those muscles, and passed along the course of the circumflex nerve, and of the musculospiral nerve at the insertion of the deltoid tendon, but not below the elbow. In 2 cases the neuritis was limited to the antero-external surface of the thigh—anterior crural nerve—and in two others, to the lower part of the leg, coursing especially behind, one the external, the other the internal malleolus, and over the instep, apparently quite superficial. These neurites developed usually during the beginning of the subsidence of the most acute symptoms and lasted from three weeks to two months. Paresthesias and slight paresis were noted, but no palsies.

Upon other diseased conditions the complicating effect of influenza was always varied, sometimes interesting and seldom absolutely negative. It was my experience, however, that whereas superadded influenza was fatal in but one instance—that one of chronic endocarditis previously referred to—the fatalities were more frequent in which influenza was itself complicated with some other affection. In a case of gastric ulcer in which blood was vomited copiously several times, the only effects were elevation of temperature, moderate bronchitis, and slight delirium for six days. In 2 cases of emphysema the chronic bronchitis was very much aggravated, the sputum became purulent and viscid, and the cough distressingly hard and weakening to the body. Cardiac dilatation and dyspnea were threatening in one case. Four cases of dry tubercular pleuritis were marked by pain, cough and increased friction murmur. An aged Jewess, with kyphoscolitic chest, chronic adhesive pleuritis and chronic bronchitis with emphysema, suffered great intensification of cough and dyspnea; the bronchitis became purulent, and fever and marked prostration ensued. In 2 cases subject to asthmatic attacks for years, the effect of influenza was to develop these attacks with intensity, and in both cases to give rise to purulent bronchitis. One of the patients had had hay asthma, coming on late in August, for many years, never at any other time, but said he suffered the same during his "grip" attack. Three cases of chronic valvular endocarditis affected with la grippe showed some cardiac arrhythmia and dyspnea. A walking case of pernicious anemia manifested only irritative dry tracheobronchial cough and increased weakness and dyspnea, and recovered nicely within ten days. In a case of large uterine myofibroma there were several attacks of fainting and increased uterine pains and a hemorrhage. The pains and after-depression in two cases of dysmenorrhea were considerably increased during the influenzal attacks. A woman of 56 years, of lithemic habit, who had been under treatment for neurasthenia for three months, was seized with an attack of influenza in the middle of April, while convalescing, and suffered great physical prostration and considerable cardiac irregularity for two weeks.

I hesitate to do more than mention that two cases of tertian intermittent malarial fever came under my care during the height of the "grip" epidemic; for, although no estivo-autumnal parasites were found in the blood of either patient—only the tertian hyalin and pigmented forms—I know of no data which would justify the claim that influenza is a predisposing cause of malarial attacks, even when so exceptionally prevalent during a season characterized by the recurrence of plasmodial activity in persons having had one series of paroxysms, as occurred in both of these cases last autumn; still it may not be altogether a hypothetic blunder to assert the possibility, at least, of such an etiologic relationship.

Recurrences.—There were four persons in whom second attacks of influenza were experienced after complete recovery from first attacks—hence, not relapses—after intervals varying from three to six weeks. Two were primary cases of pulmonary tuberculosis, one was a case of chronic valvular endocarditis—mitral—and one a woman at the menopause.

Sequels.—The following were observed: Unilateral sweating of the right side of the face and neck only, in a man aged 42; this symptom was noticed first two weeks after convalescence, lasted six weeks and disappeared unassisted as suddenly as it came on. Phlyctenular keratitis occurred two weeks after an attack of influenza in a negro boy 3 years of age, with a moderate degree of rickets. Erysipelas of the face and neck followed one week after a "grip" attack in a middle-aged woman, and terminated in an egg-sized abscess at the base of the left posterior anatomical triangle of the neck—inner portion of supraclavicular fossa—with recovery after incision and drainage. Melancholic depression lasting nearly two months followed a severe seizure in a woman aged 52, in the climacteric. Total deafness resulted in a girl of 3 years, who had severe head pains and delirium for one week. Paraparesis lasting several weeks was present also, but cleared up completely. Neuritis in the left shoulder in 1 case; and marked physical prostration and lack of ambition to resume any work whatsoever for some time after convalescence was established, were common to many patients.

Discrimination from other Affections.—It is not my purpose to enter into any details concerning the diagnosis or differentiation of influenza from other diseases. But closely woven with the warp threads of the clinical features previously outlined are the woof threads of diagnosis shuttled to and fro often in the judgment until the morbid design is complete, true, well-defined, substantial and therapeutically suggestive. So that, it may suffice to mention merely those affections that, in my experience, entered into the question of diagnosis. Thus, the symptoms of onset and development not infrequently made it necessary to decide upon influenza by the exclusion of the following diseases, principally: Acute muscular rheumatism or myositis, follicular tonsillitis, measles—in children, prior to the skin eruption and in the absence of Koplik's spots—intermittent malarial fever, cerebrospinal meningitis and typhoid fever—in lingering febrile cases.

In conclusion, among certain reflections that may be expressed based upon a study of some of the clinical and epidemiologic characters of influenza recently prevalent, are the following:

1. The disease has a ferret-like selection for "weak spots"; for the defective strands in the systemic rope, and especially for nerve tissue. Huchard[6] believes that the frequent pulmonary congestions met with indicated lower arterial pressure due to paresis of the vagus and diminished elasticity of the pulmonary vesicles.

2. The prominence of suppurative complications. Reading the recent classical Wesley M. Carpenter Lecture, by Dr. F. A. Packard, on "Infection through the Tonsils," makes one alert to the probability of the tonsils being gateways for the entrance of pus staphylococci and streptococci, as well as the bacilli of Pfeiffer. Congestive redness of the fauces appearing a day or two before the attack has been testified to by a number of careful observers. Huchard refers to the seriousness of secondary infection induced even in mild or attenuated forms—of influenza—by lowering the resistance and exalting, seemingly, the virulence of the ordinarily harmless bacteria of the body. It may be well, as Cotton suggests, that the intractable cases of la grippe are due really more to a streptococcus or staphylococcus infection, similar to the various resulting suppurative complications in pneumonitis, tuberculosis, scarlatina, pertussis, diphtheria, tonsillitis, and so on.

3. The relation of seasonal and meteorologic conditions to the prevalence of influenza and certain complications, as pleuritis, pneumonitis, neuritis and tonsillitis: The height of the severity of the "grip" epidemic was unusually late in coming this year—1899-1900—last year having been more of a normal seasonal "grip" year, the height lasting about seven weeks, beginning in the first week in December, 1898. As my notes show, there was a progressive increase in the number of cases of influenza from late in December, 1899, till April, 1900, the climax of the recent epidemic occurring during the six weeks from the middle of March to the end of April. My influenza cases numbered 5 in December, 12 in January, 22 in February, 35 in March, 47 in April, and 7 in May, 1900.

Now, as shown in a paper read by me in May, 1899, before the American Climatological Association,[7] influenzal outbursts are preceded by relatively warm, moist, and calm weather, but prevail with the onset of cold, clear, dry and windy weather, when the meteorologic data show an abnormal increase of the barometric pressure, lower temperature, abnormal temperature ranges and diminished equability, lower percentage of relative humidity, and increased prevalence of north and northwest winds. These observations I was able to confirm during the recent epidemic in connection with practically all of my case groups.

The meteorologic conditions favorable to the epidemicity of influenza prevailed at a time when the respiratory complications noted are usually favored, also, as independent affections, that is, after a remarkably warm and mild breeding December we had a remarkably late and cold spring, a season when the imprudent and impatient expose themselves too much and clothe themselves too little; insistently and recklessly making a fetich of a date or a festival to change their attire instead of sensibly adapting themselves to the axiom that they can not change the weather—hence the anginas, pleurites, pneumonites and neurites.

BIBLIOGRAPHY.

1. Archiv für klin. Chirurgie, Band lix, H. 3.
2. British Med. Jour., March 3, 1900.
3. Forchheimer: Festschrift in Honor of A. Jacobi, May 6, 1900.
4. THE JOURNAL A. M. A., March 10, 1900.
5. New York Med. Jour., Feb. 17, 1900.
6. Bull. de l'Acad. de Méd., Feb. 27, 1900.
7. The Relation of Local Meteorologic Conditions to the Influenza Epidemic in Philadelphia, Winter of 1898-99. See Phila. Med. Jour., August. 19, 1899.

SURGICAL CIRCUMCISION.*

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It would be a work of supererogation to recite here the indications for removal of the prepuce; your specialty has made them an every-day occurrence through the whole gamut, from those immensely elongated foreskins with adhesions, concretions of urinary salts and smega, to the barely enlarged fold which causes no perceptible local disturbance and yet provokes most serious reflex conditions. I believe that my experience does not differ from that of other genito-urinary specialists, who are often called in by pediatrists or general practitioners to operate, and afterward learn that the removal of an almost normal foreskin was followed by cessation of enuresis, infantile convulsions, or glycosuria that had resisted other treatment.

How should circumcision be performed, and who should perform it? The preparation of the field of operation is naturally the same as that employed for any other surgical procedure, and the details and precision to be observed are necessarily the same.

Ordinary humanitarian sentiment prevents consideration of circumcision without anesthesia. It is perfectly true that millions of infants have been circumcised while entirely conscious, and no subsequent evil has befallen them; I do not believe, however, that any physician would rend a mother's heart by so torturing her babe. It is specious to hold that an infant's sensibilities are not sufficiently developed to permit it to perceive pain. If so, why does the infant cry when a maladjusted pin pricks it, or when its delicate skin is irritated by a badly folded or moistened diaper? Is it logical to assume that its shrieks of agony, when the foreskin is cut or torn off, are but reflex?

The choice between local or general anesthesia is necessarily governed by the age and condition of the patient. As a rule, general anesthesia should be employed in all children under the fifth year, provided no cardiac or pulmonary condition prohibits. General anesthesia too may be necessary in older children, whose mothers have striven to render them unfit for the battle of life by pampering them into milk-sops, or by convincing them that they are not born to suffer even the slightest inconvenience under any circumstances.

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Those brave little fellows whose mothers reared them properly in the just pride of giving *men* to the nation, are easy subjects of local anesthesia when circumcision is required. Some of these will insist upon being so placed that they can see every step of the operation and ask numerous amusing questions while it is being performed.

When deliberately done, the operation requires but a short time; the few instruments for the purpose are in every pocket-case. When carefully performed, under strict aseptic precautions, it leaves, within four to seven days, a union of skin and mucous membrane as perfect as if the patient had been born without a foreskin.[1]

Simple as is the technique of this circumcision, it in great part answers the question, "Who shall perform circumcision? We might stretch a point in this regard when viewed as a religious rite, if those who perform it had received the instruction to do a surgical operation in a surgical manner. Considering the origin of the operation in detail would lead us into the domain of theology, which we have as little ability to invade as have non-medical men to perform surgical operations. But we may recall that when Moses laid down the law of circumcision the priests were not only theologians, but law-givers and physicians as well. Five thousand years ago diseases were necessarily treated and operations performed in the light of the then existing knowledge. The extraordinary vital resistance of the races and of individuals who are circumcised may account for the wonderful escape from infection, which the majority of infants undergo. The Mohelim or Mauhelim in different regions perform the operation differently. All grades of uncleanliness are common. Some circumcisers suck blood from the cut; no one is deputized to ascertain that the operator (sic) is free from tuberculosis, syphilis, carious teeth, or even that he has a clean mouth with which to perform this filthy act. Others squirt a mouthful of wine or vinegar over the wound from an equally unexamined mouth. Some, it is true, have a very neat set of instruments for performing the operation, but none of them have as much as a bit of sterilized catgut to ligate the artery of the frenum, should it be cut. Others tear the prepuce with the thumb-nail, which is kept long for the purpose. The fact that finger-nails can not be kept aseptic suffices to denounce this method.

It would be un-American to deny any one the performance of an act which his religion demands. But when this act entails a surgical procedure upon a defenseless babe, the safeguards that should be placed around it furnish a question that jurists may well consider. Sociologists and political economists, too, might well investigate whether the risks of spreading syphilis, tuberculosis, erysipelas and other diseases by non-professional operators outweighs any fancied encroachment upon the rights of the individual. A glance at text-books on law teaches that even the unborn have rights; has not the child a week old an inherent right to protection from infection? Has not the public a perfect right to protection from the spread of disease? Does not the babe when infected with a communicable disease become a menace to the public?

Last year France enacted a law forbidding circumcision performed otherwise than in the presence of a physician. This was a step toward the proper end, but it can not prove as effective as might be desired; operators who must invariably expect asepsis of those who aid them know too well from sad experience the result of placing too much confidence in them. Unfortunately, the French law alluded to became effective at a time when our sister republic disgraced herself by a wave of irreligious persecution. The purpose of the law would then necessarily be misunderstood by the ignorant.

It is far from me to inveigh against circumcision of infants. To do so would be to defy the experience of all practitioners and particularly that of genito-urinary specialists. It would be folly to assert that the Jews of to-day are more moral than their uncircumcised brethren; the fact, however, remains that numerically those circumcised in infancy occupy less of a space in the annals of venereal diseases than do others.

While these considerations could be extended almost throughout the whole domain of medicine, I think enough has been said to ask your discussion of the following

1. Circumcision is a surgical operation, requiring all the precautions of asepsis and surgical technique, without which it is a danger to the individual and to the community.
2. Circumcision of infants, especially when the prepuce is large, contracted, adherent or deformed, is a benefit to the individual and a protection to the community.
3. The rights of individuals to the free exercise of religious liberty would be in no wise infringed if the operation of circumcision were performed by physicians.
4. The state should protect future generations by requiring that circumcision be performed by physicians.
5. If, for the sake of religious sentiment, devout Jews desire to have their babes circumcised by none but Jews, there are many Jewish physicians who could become Mohelim, so that while performing the religious rite they may conduct it as modern aseptic surgery demands.

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DISCUSSION.

DR. LOUIS FISCHER, New York City—I would like to ask the author the after-treatment of circumcision—whether he uses merely a dry gauze dressing, a dusting powder, or what?

DR. EDWIN ROSENTHAL, Philadelphia—I would like to know whether Dr. Valentine advocates—in infants 1 or 2 days old having an impervious meatus—the use of the same technique? I have never known the professional circumciser to use any sutures, simply using lint. Does Dr. Valentine advocate the use of sutures and the same technique in the very young infant as in the adult? I would also like to ask whether he advocates the performance of circumcision from a purely hygienic standpoint, even in persons in whom there is no special indication?

DR. F. C. VALENTINE, New York City—I resort to no after-treatment. Inasmuch as the gauze retains the mucous membrane and skin together, nothing more is required. The slight oozing of blood which follows the coaptation of the lips of the wound takes place into the gauze itself, thus completing the adjustment and retention of the parts *in situ*. It forms a hard ring which drops off in from four to seven days, leaving no evidence of circumcision. I think in an infant of a day or two, with merely a tight and not large foreskin, I would content myself with simply snipping the prepuce, because usually when a child is relieved so early there is absorption of the dependent foreskin so that barely any deformity remains. On the other hand, if there are adhesions of the mucosa to the glans, I would certainly remove the entire foreskin for fear of a return of the adhesions. The desirability of circumcision is too large a subject for discussion at this time, but it is generally believed that fewer Jews and circumcised Mohammedans come to the genito-urinary specialist for the treatment of venereal disease than other nationalities. I say that they are comparatively rare, and by that I mean that perhaps in an average of say fifty cases daily I see four or five Jews. In southern Russia there is a sect of Jews who do not practice circumcision, and I am told that among them venereal disease is just as frequent as among the uncircumcised of other faiths. We hear considerable of making the toilet of the prepuce, yet it will often be found very filthy in men who are singularly clean about the rest of their person. I am not prepared just yet to advocate universal circumcision.

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[1] The complete technique of painless circumcision of infants and adults is fully detailed on pages 90 to 101 of "The Irrigation Treatment of Gonorrhea, Its Complications and Sequelæ." Wm. Wood & Co., New York, 1900.

Dr. Fischer—I saw a secondary hemorrhage following on the second day after a surgical—not a ritual—circumcision. It was not a case of hemophilia. I should like to know the after-treatment for the unusual, not simply for the normal, cases.

Dr. Valentine—It is inconceivable to me how secondary hemorrhage can occur except in cases of hemophilia. It is a singular thing, however, that hemophilia occurs more frequently among the Hebrews than in any other race. I must admit I have seen secondary hemorrhage follow ritual circumcision. Here, torsion or ligation has been required. Uncleanly people sometimes allow the circumcision wound to become dirty and infected. By the technique alluded to in my paper the parts are protected from infection, though before adopting this method I did occasionally see these cases. I saw one case of infection after circumcision by the method described in a case which had been operated on by a beginner. Examination showed a stitch abscess from unclean catgut, and a neglect of proper precautions at the time of operating. These accidents should not occur. I have never performed circumcision upon a hemophile, but should I do so the chances are that I would try the effect of suprarenal extract. I should also treat the hemorrhage on general surgical principles. Sometimes in performing circumcision a vein is cut, with resultant hematoma. Even a very small hematoma can cause considerable fever—perhaps even as high as 104.5. In one such case all that was necessary was to curette out the hematoma and re-dress the parts. Within an hour or less the temperature had dropped to the normal.

TREATMENT OF LARYNGEAL TUBERCULOSIS AT THE MONTEFIORE HOME FOR CHRONIC INVALIDS (N. Y.)*

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One of the most difficult chapters in the treatment of the upper air-passages is the management and treatment of laryngeal tuberculosis. In fact, to the hospital physician this has been one of the most disagreeable tasks possible. To see these most miserable of sufferers live for months, or even years, with constantly increasing pain, for whom even the swallowing of their own saliva is a dreaded effort, has been an occurrence of every day; and we, as physicians, have been as a rule practically helpless in combatting this disease. Morphin, internally and locally, quickly reached its effectiveness in most cases, and for many patients the cocain spray is extremely disagreeable. For the last ten years I have had to attend to these patients at the Montefiore Home, where we have sometimes as many as twenty or thirty suffering from laryngeal tuberculosis in every stage possible. That under the above condition of our comparative helplessness it was not pleasant to treat these patients and see them suffer pain constantly, with occasional relief lasting half an hour or a little longer, every one will admit. Luckily things have changed in the last few years, and I confess that nowadays it is a pleasure to treat such patients. They look happier, they feel better, can swallow much better, and last, but not least, they are anxious to receive the treatment, while formerly they not infrequently tried to avoid it. All these facts have also been noticed by other physicians who have seen the patients at the above institution.

However, before I describe the methods applied nowadays, I will say that there is a stage foregoing the formation of tubercles and ulcerations in the larynx. Such conditions we can see quite often in an institution like the above one, where there are besides the many consumptives just as many afflicted with some form of nervous or other troubles. These conditions in the larynx, which I might sum up under the name of

"PRETUBERCULOUS LARYNGITIS,"

have to be treated with as much care as the outspoken tuberculous affections of the larynx. Of course, this is done with greater ease in a closed hospital with mixed patients—i. e., tuberculous and non-tuberculous—where every one showing any of these symptoms is considered suspicious and treated accordingly. But with people who already have signs of tuberculosis of the lungs, and manifest some catarrhal symptoms in the larynx, this can and ought always to be done in private or dispensary practice as well. If in this stage a patient is treated conscientiously I am convinced that in many cases an outbreak of tuberculosis of the lungs can be avoided.

The symptoms of this stage are anemia, hyperemia and swelling. In making these divisions I agree perfectly with Otto Ringk,[1] when he says: "The treatment of this first stage is to be considered according to whether we have to deal with anemic or with hyperemic mucous membrane. The strictest differentiation between the medicaments after this point has been decided assures the possibility of success. The former naturally will need more irritant drugs than the latter.

In the anemic stage I have found the following to be of service: insufflations of zinc sozoiodol with sugar-of-milk, with applications of nitrate of silver in 3 per cent. solutions, liquor ferri sesquichlor. (1 to 30) and balsam of Peru with spir. vini rectif. I have not risked applying any strong astringents or caustics for fear that we might get not only a hyperemia, but as it occurred in a case of Ringk's, an edema of the entire mucous membrane of the larynx. I need not remark that such an accident is the last to be desired, and that we have to be on our guard in making applications.

In the hyperemic stage I have used, with here and there remarkably good results, the following solution: Creosote, 5; spir. vini, 10; glycerin, 50. (The creosote can be used even stronger; see Schech.) Applications of tannin, alum and other astringents have also been used with benefit. That different inhalations ought to be used besides this treatment, and that especially at this stage any catarrhal condition of the nose or throat ought to be looked after very carefully, I will only mention in passing.

After ten years' experience at the Montefiore Home, I am convinced that there exists such a pretuberculous laryngitis, and that it can be treated successfully in a number of cases, thus preventing the real outbreak of tuberculosis in the larynx. Once an erosion or an ulceration is to be seen in the larynx, we treat the patient as tuberculous. This leads us to tuberculous laryngitis itself, and we see here, as is generally conceded, four different forms, viz.: 1, the tuberculous infiltration; 2, the tuberculous ulceration; 3, the tuberculous tumor, and 4, miliary tuberculosis of the larynx. I do not wish to go into details as to the pathologic anatomy of these conditions. Allow me to remark only that I have repeatedly seen, and here I agree with B. Fränkel, miliary tubercles in the larynx. Virchow even recommends the larynx to all those who want to study the true tubercle. These tubercles, however, are located very superficially and break down at a very early stage, leaving a small shallow ulcer. This is the reason that we so often see ulcerations but not miliary tubercles. At the Montefiore Home, where I examine the patients and watch them at a time when they show no symptoms of tuberculosis and complain only, perhaps, of a little scratching in the throat, I repeatedly saw, as I have said, some miliary tubercles.

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* Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

[1] Monatsschr. f. Ohrenheilkunde, p. 180, 1889.

That in the general treatment of laryngeal tuberculosis pure air is as essential as anything else, goes without saying, and this fact has been recognized by the directors of the Home. Upper Broadway—near One Hundred and Fortieth Street—where this institution is located, has become a great thoroughfare, with entirely too much dust and traffic for consumptives. Therefore, a new home with all modern improvements is being erected in the country, at Bedford Station, N. Y.; and it is the purpose to gradually remove all the consumptives to this country place. This plan will surely bear excellent results in the near future. I need not mention that general treatment is carried out, including hydrotherapy, rest-cure, etc. A great problem for us still is how to keep all these patients occupied, but I hope we shall come nearer the solution of this when all consumptives are housed in the country.

LOCAL TREATMENT.

We now come to the most important point, the local treatment. The majority of our patients are in an advanced stage, and the treatment is thus so much more difficult than it is in many other institutions. At one time the application of different powders was very much in vogue. The most important of these, which still are popular to a certain degree, are boric acid, iodol, europhen, dermatol, aristol and pyoctanin. The latter is recommended by Bresgen, Rosenberg, Schech and others.

More important were the fluids used for direct application, and there is hardly any new or old drug that has not been recommended. The iodoform ether solution, which at one time could be seen in almost every clinic in the United States, is now very little used; Rosenberg's menthol with oil, carbolated glycerin, resorcin, balsam of Peru with collodion, the phenolum sulforicinicum, the injections of creosote and orthochlorophenol in glycerin, all have their followers, and have been applied with some satisfaction in a certain number of cases.

Lactic Acid Treatment.—The remedy par excellence, which for the last ten or twelve years has predominated over all, is lactic acid. I can speak with a certain authority about lactic acid, as I witnessed the very first experiments made in Berlin in 1885, by Professor Kráuse, and followed up some of these cases until their death. Since 1885 I have used lactic acid constantly. I know its advantages and disadvantages. We had seen tuberculous ulcers heal under nitrate of silver, under zinc chlorate, and other astringents, but it was claimed that the proportion was larger under lactic acid. There was some truth in this assertion, and I myself applied lactic acid during all that time, merely for want of something better, for I knew how many patients dreaded these applications—the pain, which sometimes lasted from ten to twenty hours after lactic acid had been rubbed into the ulcerations, was terrible to them, and others again feared the spasm of the glottis more than their usual pain. In a dispensary, where consumptives come and go, we do not notice how many stay away from such treatment, and judge only from those who remain. It is different in a sanatorium where the same patients are seen constantly, and I know quite a number who used all kinds of excuses only to stay away from the lactic acid treatment. It is different now. Since new drugs have given us the ability of making these people comfortable, they anxiously wait for treatment, and I have seldom known any one to miss it voluntarily.

Menthol-Orthoform Emulsion Treatment.—The way we proceed is the following: We generally cleanse the larynx, if this be necessary, with any indifferent spray, or swab it with cotton, etc. This is advisable also when there are secretions below the larynx in the trachea and down to the bifurcation. This previous cleansing makes the patients cough up the greater part or all of this secretion, and they can retain the drugs better. Whether these drugs do not in this way reach some ulcerations in the trachea which can not be seen by laryngoscopic examination, is a question which I should not like to decide here. It is, however, conceivable that fluids especially run down the trachea and gradually reach deeper ulcerations in the trachea.

After this cleansing a powder consisting of saccharated suprarenal gland—about 3 to 6 grains—is insufflated into the larynx mostly, on to the ulcerations. I do this in the beginning of the treatment, when I do not know the toleration of the patient, for the following drugs. But now it seems to me almost rational to use it in all cases of dysphagia, as it helps to prolong the local anesthesia. I have entirely abandoned the use of cocain for these cases, and this for several reasons: 1. The paresthesia following the application of cocain is very disagreeable to many patients. 2. It undoubtedly affects the heart in some cases. 3. The solution decomposes quickly—this holds good for all cases. The powdered suprarenal gland has no toxic effect if applied in this manner; it does not produce the paresthesia, but on the contrary, within one-half to one minute, a pleasant cooling sensation sets in, and it does not decompose readily in this powdered form.

The next step is the application of my menthol-orthoform emulsion. I have been using this emulsion for over two years, and the more I use it the better I like it. Carl Kassel was the first one to use an emulsion with olive-oil. He says[2] that my emulsion is a great improvement on his, but that a bad taste persists after its use. I have never heard any complaint of this from any patient, nor from any other physician, and I think the Doctor is mistaken in this respect. If anything, the taste of the menthol-orthoform emulsion is pleasant.

There can be no doubt that the anesthetic properties of the orthoform on the mucous membranes of the ulcerated larynx are of immense value. And there is no longer any question that by means of the application of orthoform we are able to relieve pain, and cause a disappearance of the difficulty in swallowing, lasting, according to my present experience, from a few hours to three, four, or even five days. These patients are not only able to take nourishment readily, and thereby are placed in a better position for a possible cure, but in favorable cases we completely remove the pain.

In all irritations of the larynx menthol is of excellent service. No doubt the good results obtained some fifteen years ago, by my friend Prof. A. Rosenberg, of Berlin, with injections of menthol with oil, were due to this fact. It relieves the cough and with this much of the secretion. This is the reason I added menthol to the above emulsion. I use the following:

℞.	Menthol	1, 5, 10 or 15	
	Ol. amygdal. dulc	30	
	Vitelli ovorum	25	
	Orthoformi	12	5
	Aquæ dest. q. s. ad	100	
Ft. emulsio.			

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[2] Ibid., p. 245, 1899.

I commence with 1 per cent. menthol in this emulsion, and as quickly as the toleration of the patient permits I increase it to 10 per cent., and it has been in the rarer cases only that I have used 15 per cent. menthol. This is a drug that causes a burning pain, especially if applied as it has to be done, directly on the ulcerations. But as I should not like to miss its good effect, as above stated, I frequently induce preliminary anesthesia with the suprarenal gland. But many patients tolerate menthol without any pain whatever.

I wish to cite a few examples of cases treated in this manner.

C. B., 48 years of age, a cigar-maker, had been forty years in the United States. His mother died of dropsy, his father of old age, and one brother of tuberculosis. He has three children; one child died of pneumonia. He was a moderate drinker, but heavy smoker—20 to 30 cigars daily. Six years ago he had some diseases of the lungs, which kept him in bed five weeks.

Oct. 17, 1899, when seen, he was below the average height, and somewhat poorly nourished. Percussion was dull in the upper left portion anteriorly and posteriorly, with tenderness on percussion in many places, especially on the left shoulder. Over both lungs were numerous small moist râles, especially over the left apex; over the right apex expiration was roughened and prolonged. The spleen was enlarged and palpable, and there were tubercle bacilli in the sputum. The larynx showed interarytenoid infiltration with papillomatous excrescences, slight ulceration on the right side of the epiglottis. I injected menthol-orthoform emulsion—menthol 10 per cent.; no cocain.

By March 22, 1900, the ulcerations on the epiglottis were healed, and the interarytenoid infiltration had disappeared. The epiglottis was now marked horse-shoe shape, and much thickened. There was no pain till the day before. A broad, somewhat deep ulceration on the right aryepiglottic ligament was to be seen. For experiment, no application was made.

On March 26, pain in swallowing was severe, and he could eat but one meal daily. The ulcer was covered with a thick tenacious phlegm and debris. Cleansing of the ulcer and application of menthol-orthoform emulsion was tried, and repeated March 29, with such success that on April 2 the patient felt much easier again and could eat, but had some pain. The ulceration looked clear, and was only superficial.

On April 16, there was renewed attack of pain on the right side of the larynx. The right arytenoid was enlarged and edematous.

April 21, after a quantity of badly tasting pus had been expectorated, the patient again felt easier.

On May 14, subjectively, the patient remained the same during all the treatment; i. e., under regular treatment with orthoform-menthol emulsion he could swallow all the food he wanted, and his appetite being good he ate well. Only when taking thin fluids as water, tea, etc., he had to be careful, else he would get a paroxysm of coughing which would be followed by vomiting. Objectively his condition was worse. The epiglottis was very flat and very much thickened; the aryepiglottic ligaments—especially the right one—were infiltrated and the arytenoids enlarged. The ulcers would come and disappear again after treatment.

I selected this case first to show how a man with such advanced laryngeal tuberculosis can go around eating his meals regularly, joking and enjoying life. Of course, *quoad finem,* his prognosis is doubtful, especially as the condition of the lungs became worse. But if this man has to die we have at least saved him months and months of terrible, sometimes almost unbearable, pain. Besides, we have given him the possibility of being nourished well for the last six months, and if his power of resistance is strong enough he has another and greater chance of recovery. That such ulcerations do heal under the treatment mentioned, this case has shown repeatedly.

Before giving the history of the next case, let me quote from a former article of mine regarding surgical intervention in such cases. I remarked[3]: "I am able to report 29 cases the history of which I have found, although I know that more than double this number have been operated upon by me. I will, however. base my conclusions only upon these 29 accurately described cases. Of these 18 were not improved, in 7 a slow amelioration occurred which could be attributed to the operation, and in 4 an almost immediate improvement took place. Of the 18 unimproved cases, 13 were in an advanced stage of pulmonary phthisis, that is, with formation of cavities, etc., and 5 were in the earlier stages. None of these 18 patients experienced any relief after curettement; the majority, indeed, attributed the deterioration in their health to the operation, and in many cases I was of the same opinion. I was struck by the fact that a large number of infiltrations, with or without formation of ulcers, were in the interarytenoid space, forming the well-known polypoid excrescences on the posterior wall. In the 7 patients of the second class slow improvement occurred, and I have noted this in affections of almost all parts of the larynx. As this amelioration constantly followed on the surgical treatment, I consider myself justified in ascribing it to the latter. In considering the last 11 cases, one would be inclined to regard these surgical operations in the nature of a salvation, but unfortunately we must not lose sight of the first 18 cases, in which the results were not good. And if I were asked to give the indications for curettement I would not be able as yet to state them accurately, in spite of the fact that many laryngologists have studied the subject for over a decade. An important factor is that we are still unable to observe or appreciate the extension of the tuberculous process to the invisible portions of the larynx, or the contiguous parts, or otherwise to form an idea of its progress, which is governed by laws as yet unknown to us. As for me, I always regard such intervention as an experiment, and leave the decision to the patient. We learn, therefore, from the above statistics, that while we have been able to effect some excellent results, we have not been spared marked disappointment in a large number, and, indeed, in the majority of cases."

This was my standpoint somewhat over a year ago. I therefore resolved to try for one year without curettage. There were several cases in which, according to former views, curettement was indicated. Although I was tempted to do it repeatedly, I abstained, and after a year's trial without curettement, I believe my patients are just as well and perhaps better off than they would have been with the operation. Whether in the future I might not come across any cases in which it will be indicated, I can not say. My present view may be illustrated by the following case.

M. G., 49 years of age, a waiter, had been four years in the United States. His father died at 46, of some sudden throat illness, his mother at 58, of pneumonia; two sisters, two brothers and his wife and children are all well. He was well up to three years ago, when he had a chill, and on the following morning could not talk above a whisper. Last winter he began to cough and expectorate; no pain, but could not eat; had night sweats; has lost thirteen pounds in the last four months.

Sept. 20, 1899, there was extensive dulness over both upper lobes; exaggerated respiratory murmur; here and there moist râles. The left, anteriorly, in a limited area, showed slight bronchial breathing; there was whispered voice, the sounds not increased. The heart sounds were somewhat accelerated.

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[3] Phila. Med. Jour., March 25, 1899.

The sputum contained tubercle bacilli. The patient had had repeated hemorrhages.

When my service commenced, on January 1, he had outspoken tuberculous laryngitis. especially infiltration of the left ventricular band. This infiltration was so marked that it covered the whole vocal cord. There were superficial ulcerations on the left aryepiglottic ligament, and the patient had considerable dysphagia. He received injections of orthoform-menthol emulsion, first only once a week, then twice weekly, and felt very much improved. During my temporary absence from the service he did not get the injection. and felt worse. His condition improved as soon as I resumed the treatment. No ulcerations were to be seen, but he felt better after the injection.

Now, after five months' treatment, the patient is in such a condition that he very rarely complains of pain. The infiltration is so much less that the vocal cord can be seen; there are no ulcerations, and the thickening of the left aryepiglottic ligament has disappeared. The patient would not think of submitting himself to operative interference, and I am of the same opinion. There is a great possibility that if we stopped with the orthoform-menthol emulsion his pain would return, also his irritating cough, and through that probably ulcerations and infiltrations (?) too. But as long as these injections can be administered so easily, why discontinue them? Why try anything else?

There is one point I can not emphasize enough, viz., to make these injections carefully. If one is in a hurry and injects the whole syringeful at once, in most cases a coughing spell will set in, and bring up all the emulsion. This will occur even when the preliminary anesthesia of the larynx with the suprarenal gland has been effective, as much of the emulsion goes down into the trachea. But if one is a little careful and injects the emulsion slowly, it will adhere to the surface, and the good results will surely appear.

Treatment with Oil.—There are some patients, however—and luckily they are the exceptions—who can not stand anything, be it cocain or anything else. They gag at the slightest provocation, or they vomit just as easily. These are patients who lack the smallest particle of energy, or who are exhausted from a very long illness, and near the end. For this class I have tried olive-oil.

Last year Paul Cohnheim, an assistant of Boas, of Berlin, reported the case of a man with ulcus ventriculi. This man, on his own account, had for weeks taken large doses of linseed-oil, and was thus cured. The oil worked like a grease—lubricant—by diminishing or abolishing the friction. We see this, as Cohnheim correctly says, in other parts of the body, too, as for example in the urethra and anus. Just as easily as large masses of feces pass the anus with comparative ease, even in the presence of rhagades or ulcers, so does food pass the oiled stenosed pylorus. Rosenheim applied this treatment in carcinoma of the esophagus, with surprisingly good results; also Boas and Akimo-Peretz saw good results. The latter gave 50 to 100 grams of an emulsion of oil of almonds daily before each meal.

I read all this only a short time ago, and it occurred to me that by lubricating the esophagus with any oil the food ought to pass more readily through that difficult place behind the infiltrations or ulcerations of the larynx, thus partly, at least, relieving the dysphagia. The first case treated in that way was that of M. Y., 34 years of age, a salesman. He was suffering from advanced tuberculosis of the lungs, and complained of great dysphagia and ulcers of the tongue. He was so weak that he could hardly sit up. An examination of the larynx was impossible, as he had too much pain in holding out his tongue. Insufflations with the suprarenal gland, or injections of the menthol-orthoform emulsion, or even cocain, were useless, as he vomited up everything. I therefore tried to improve his lingual ulcerations first. These were situated on and around the tip of the tongue. They spread especially on both sides, and under the tongue at least an inch in each direction. There was no diabetes nor any specific infection. In this case even the concentrated lactic acid had been used before he entered the home, with no good whatever. The application of the menthol-orthoform emulsion had the same negative result, and I am almost inclined to believe that orthoform has very little effect on the tongue, but as yet I can not judge sufficiently in that respect, as these cases are rare. At any rate, he did not improve, and as an experiment I gave him a glass of olive-oil one-half hour before his breakfast. After four days he said he could swallow a little easier. I now had 10 per cent. nitrate of silver applied to his tongue, and injected, into the larynx, a few drops of the menthol-orthoform emulsion, which he retained. The olive-oil was continued, and three days later he again felt better and I was able to examine his larynx. There were deep ulcerations on the epiglottis, and both aryepiglottic folds. The vocal cords were irregular and ulcerated. His tongue improving but slowly, I again tried lactic acid for it, but if anything it made it worse.

These cases of lingual tuberculosis are not frequent, and I just recall one case by C. E. Bean, of St. Paul.[4] He says: "Lactic acid has been very much vaunted, and one or two cases are reported as having been cured by means of this remedy, well rubbed into the ulceration; but the numerous failures to even afford temporary relief seem to demonstrate the fact that it is no more to be depended upon when the disease is situated in the tongue than when it has been developed in the larynx; and the result of treatment in that location has been disappointing." My experience is about the same. I can not report much more about the patient, except that within a few days he could swallow a little easier, and that he left for Europe.

The next case I treated with olive-oil was a private patient: N. O., 48 years of age, a business man. Eighteen years before he had acquired syphilis, and for four years had had tuberculosis. He complained only of great dysphagia, and the conditions were about the same as in the previous case. He rejected everything, and an examination in his bed was impossible. I ordered one glass of olive-oil every morning, which he took with great reluctance. After five days the house physician reported to me that there was some improvement in swallowing. I then saw him three days later, and after taking the olive-oil with great disgust he felt much better, as he had been able to take quite a little nourishment. As he had now decided to leave for the country I did not make any further trial with orthoform, etc., but advised him to continue for some time with the oil. At this last visit I saw in the larynx all the symptoms of advanced tuberculosis. A few weeks later I heard that his dysphagia was improving steadily. In the two other cases treated with olive-oil, I did not see any improvement whatever, and I shall not report them in detail. However. I consider it just, in suitable cases, to give this a further trial, and shall do so in the future.

Phototherapy.—The last of our resources in treating laryngeal tuberculosis is phototherapy, or treatment with the electric or sunlight. I have had some results with that treatment, but I have not reached any final conclusions in regard to it. However, I shall publish all my experience in phototherapy in the near future.

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[4] Bean, C. E.: Report of Two Cases of Buccal Tuberculosis, N. Y. Med. Jour., Sept. 14, 1889.

Heroin for the Cough.—And now one word about the bronchial cough in these cases. Among the most distressing symptoms of laryngeal tuberculosis is the concomitant bronchial cough, which is often of a most harassing character, and contributes materially to the patient's exhaustion by preventing rest at night. For its relief we were formerly forced to rely on morphin and codein, although both these drugs left much to be desired. Aside from its well-known after-effects, morphin is particularly objectionable because of its tendency in many instances to disturb the digestive organs, and thus impair the patient's appetite. Codein, while in general preferable to morphin, has the disadvantage of being uncertain and unreliable in action. The introduction of heroin has been a decided advance in the treatment of cough in phthisical cases. In an article on the "Treatment of Dysphagia and Cough, Especially in Tuberculosis,"[5] I have reported my preliminary results with this new drug, which were most favorable. Since then its continued use has given very satisfactory results. The irritable cough in tuberculous patients frequently yields to the administration of heroin, and this occurs in cases in which both morphin and codein have proved completely inefficient. The action of heroin in modifying the respirations by diminishing their frequency and increasing their force, renders the breathing much easier. Aside from some lassitude and slight constipation, I have never observed the least after-effects from heroin, and as my experience relates now to several hundred cases in dispensary and private practice, I feel convinced that the drug is perfectly safe when used with ordinary precautions. In several instances, however, the constipation was sufficiently marked to call for the administration of laxatives, such as extract of cascara sagrada and aloin. My observations in this respect are in accord with those of Einhorn, Manges, and others, who have reported their results. Although we can not be sufficiently conservative in admitting to our confidence any new remedy which claims our attention, my experience with heroin has now been so extensive that I have no hesitation in assigning to it a prominent place in the list of medicaments for the relief of cough.

In summing up my experience with tuberculous laryngitis, I should like to emphasize the fact that there is a pathologic condition which might justly be called pretuberculous laryngitis. This ought to be treated with great care in every consumptive patient. Regarding the treatment of laryngeal tuberculosis we are nowadays fortunate enough to give great relief to by far the majority of these patients. Of these remedies which are so potent, I should like to mention: 1. The saccharated suprarenal gland for the induction of preliminary local anesthesia. 2. The menthol-orthoform emulsion for the production of a longer local anesthesia, and for its curative effects. 3. Olive, almond or sesame oil for the relief of the dysphagia. 4. Phototherapy. 5. Heroin for the relief of bronchial cough. Lactic acid ought to be dispensed with as antiquated and barbarous torture to the patients. Finally, I would like to say that here is a large field for further fruitful investigations in which every one ought to be interested; and the more we work in this field the more relief we shall give to our patients and the more cures we will effect.

DISCUSSION.

Dr. Emil Mayer, New York City—I would like to endorse the use of orthoform for this particular condition, and would call attention to the preparation with the white of the egg, for which I believe Dr. Freudenthal is responsible; that makes a very stable preparation and one that is valuable. I have found orthoform mixes very well with some of the liquid vaselin preparations, such as benzonol, and I have used that sometimes when the emulsion was not to be obtained. It may be said also that orthoform is not only of use for the painful deglutition that is associated with the tubercular trouble, but also in those conditions following operations. Nothing will give your patient so much comfort after a tonsillotomy as this emulsion.

Dr. Holbrook Curtis, New York City—One thing brought out was the use of the suprarenal extract. I reported, a few months ago, my first case, and I have now three using the extract for painful deglutition, and with most remarkable results. It has at the same time a most excellent effect on the edema. I have also used the suprarenal extract in quinsy and edema of the glottis with remarkable effect. I think it will prove of great value.

Dr. Richards—I would like to ask Dr. Freudenthal whether this solution can be sprayed through an atomizer.

Dr. Freudenthal—Not this solution; I use it with an ordinary laryngeal syringe.

Dr. W. Freudenthal—I am glad Dr. Mayer had the same experience as I did, and I shall try this solution in benzonol, which I think will be very good. I have not used this emulsion for tuberculous cases alone, but I have used it in syphilitic cases as well. In a case that came to me recently I injected this solution for severe pain, and the patient experienced almost immediate relief. The effect on edema is very good, which is due largely to its action as an astringent.

TREATMENT OF ATROPHIC RHINITIS BY ELECTROLYSIS.

AND SOME EXPERIMENTS TO DETERMINE THE EFFICIENCY OF NEEDLES OF DIFFERENT METALS.*

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Atrophic rhinitis has been the bane of the rhinologist since the diseases of the nasal mucous membrane began to receive special attention. It is not at all surprising that the disease remained incurable during the time in which the diseases of the upper air-tract were treated by the ophthalmologist or otologist as a side issue to what he considered of more importance. Not only this, but most other diseases of the nasal cavities were considered incurable, not alone by the laity, but by the profession as well. This is hardly to be wondered at when we remember that the treatment of the different diseases of nasal cavities was much the same and consisted in the use of a spray and the application of a solution of nitrate of silver to the surface of the nasal mucous membrane or to such part of it as could be easily reached. The patients were given a spray to use at home, and I think that they accomplished as much by its use as was accomplished by the physician himself. These sprays were usually composed of varying combinations of alkalies, and each specialist had a formula of his own which he was only too apt to think was a specific. In the use of watery sprays the fact that the nose was made for the passage of air and not for water, seems to have been overlooked. That these sprays gave temporary relief, but did not cure, was at last recognized by all, and while it may be necessary for the physician to occasionally use a spray for cleansing purposes, I am inclined to think it is well for the patient to cleanse his own nose as a rule.

The medical sprayer, if you will allow the expression, did not cease to exist when he found that sprays did not cure nasal disease, but the argument was changed and he frankly admitted that the so-called catarrhal diseases were incurable in this climate—it made no particular difference where he might be, one place was too windy, another too dusty, another too cold, in another the climate was too variable, etc., ad nauseam—but if the patient will use this spray, the disease will be prevented from growing worse. This advice was given to all patients, but more especially to those who suffered from one of the most horrible of the diseases of the nasal cavities, horrible not from disfigurement or from danger to life, but from the persistent and almost unbearable odor which accompanies it. In this disease it would seem that a spray might be of some use, and it undoubtedly is of some slight benefit, but there is usually not enough of it in volume or force to dislodge the crusts, and if the patients rely on the spray for treatment they are condemned to live with this disgusting odor always with them, an object of aversion to themselves and avoided by their friends. Fortunately they early lose the sense of smell and in this way are relieved of a part of their burden.

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[5] Phila. Med. Jour., March 25, 1899.

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To cure this disease confers as great an obligation on these patients and their friends as the cure of any other loathsome disease. With the zeal born of specialism, earnest, intelligent men have set themselves the task to accomplish this object, and while much yet remains to do, we have already succeeded to a great extent in curing the disease. As is often the case, our treatment has outrun our knowledge of etiology, and while we are already able to cure a large proportion of the patients, we do not know as yet what part the bacteria play in the production of the disease, neither do we know how much the disease may depend upon or be influenced by the general systemic condition or by the presence of a nasal empyema, or what part the cephalic index may play as a predisposing cause. It has not yet been definitely settled whether the bacteria which are found in such numbers in the nasal cavities in cases of atrophic rhinitis are of primary or of secondary importance, and as I have nothing new to offer, I will not take your time with a review of the opinions of others on the subject. I do wish to call your attention to the importance of a close differential diagnosis between true atrophic rhinitis and disease of the accessory sinuses. That many of the cases which are diagnosed as atrophic rhinitis have their origin in a nasal empyema there is not the slightest doubt. I have seen so many cases with all the symptoms of a typical atrophic rhinitis and have found after the crust formation was stopped that there was a discharge from a nasal empyema, that I feel that the recognition of this condition can not be insisted upon too strongly. Whether the nasal empyema—when it exists—is of primary or of secondary etiological importance is a question to be decided by the physician in each case, but if we expect to be successful in treating these cases, the nasal empyema must receive attention. The diagnosis of this complicating disease is easily made. If after the nasal cavity is thoroughly cleansed we find pus appearing within a short time in one or both the pathways of the drainage from the accessory sinuses, we may feel reasonably sure that we have to deal with a collection of fluid in one or more of the sinuses. The enlarged middle turbinate which is so often found in cases of atrophic rhinitis may be the cause of a nasal empyema by interfering with the drainage from the accessory sinuses, or the cell which is contained in this enlargement may be the site of the empyema. If we are satisfied that we have to deal with a nasal empyema as a complication of the atrophic condition, we should not hesitate to remove enough of the turbinate to improve the drainage. I have removed the anterior wall of the enlarged middle turbinate, with the most gratifying results, in cases where I had reason to believe that the empyema was the cause of the crust formation. It is always well to examine very thoroughly for a possible sinus involvement those cases which follow scarlet fever, measles, typhoid fever, diphtheria and erysipelas. If a nasal empyema is found to exist it is unnecessary to add that it should be treated by thorough drainage. What proportion of the cases of atrophic rhinitis depend upon sinus disease is very hard to determine; from my own experience I should think fully 50 per cent. have this origin or are seriously influenced by this complication.

After this brief review of the most important complication of the disease, we will next consider its treatment by electrolysis. In 1895, at the meeting of the Belgian Laryngologists and Otologists, held in Brussels, Cheval announced that he had been able to cure 91 per cent. of his cases of ozena by interstitial electrolysis. This statement was received with more or less incredulity by the other laryngologists, and the method was tested very thoroughly by Bayer, of Brussels, and by many others during the next year. Bayer, who was at first skeptical, after a year's experience reported favorably, as did many others. Among the enthusiastic advocates of the method are Brindel, of Bordeaux; Rethi, of Vienna, and McBride, of Edinburgh. All observers unite in the report that there is an immediate and decided lessening of the odor and a marked decrease in the amount of crusts and that they are easily removed from the nose. The improvement often occurs after the first treatment and it rarely requires more than five or six applications to accomplish all that can be hoped for. Cheval reports that 70 patients were cured in a single sitting, 12 required several, and 3 were still under treatment. One case was improved, but not cured after six sittings. One of the most striking results of the treatment is the disappearance of all odor. This often occurs on the day of the first treatment, and it may not return for months, even though the crust formation does not entirely cease. The important question then is, For how long a time does this improvement continue? This will, of course, vary in individual cases, and may be from a few months to a year or more. McBride exhibited two cases before the British Medical Association, in 1898, in whom the improvement had lasted for a year without any return of the odor and with but slight tendency to crust formation. Brindel, while noting improvement in all, admits that it is not permanent. In the ten cases which he reports, at the time of writing there was no return of the odor or crusts, and they had been under treatment as follows: 1, eleven months previously; 3, ten months; 1, nine months; 1, eight months; 2, seven months; 1, five months; 1, three months. Of these only two could be said to be cured, that is, in which the atrophy had entirely disappeared. Hajek and Chiari both have protested against considering these cases as cured when the odor and crusts have only been relieved, but no anatomical changes have taken place. Mendelsohn also cautions against placing too much reliance on the permanence of the cure.

If we seek for an explanation of the effect of the galvanic current upon the tissues in cases of atrophic rhinitis, we find various opinions expressed by different writers. Bayer attributes it to the effect upon the nervous system, Gautier and Javier to the deposition of a copper salt in the tissues, Delavan to the mechanical stimulation of the tissues. If we investigate the action of the galvanic current upon living tissue we shall be able perhaps to explain the effect which it has in these cases. In doing this we must of necessity go over much ground that is perfectly familiar to you all. It may be well in the beginning to make this statement: that the passage of the electrical current, as we know it, is always destructive to cell life, that it is always and everywhere a life-destroyer and not a life-giver. If the destruction is not carried too far it may act as a stimulant and it may also have a remedial action by liberating certain elements from the tissues through which it passes or by depositing remedies in them. It is not material whether we consider the change in the cell by which this destruction is accomplished as chemical or mechanical. The galvanic current outside of the battery passes from the positive to the negative pole and when passing through living tissue carries along with it a certain amount of the basic elements of the cells, thus destroying their chemical structure. The removal of the base from the salt liberates those elements which are known as the acid-forming, and these being liberated by the current appear at the positive pole. Oxygen and chlorin are the elements that appear at the positive pole, with perhaps others in infinitesimal quantities, and they unite with the metal of the electrode and form a salt which may in turn be decomposed and the metal carried along with the current. It is evident that many things may have an influence over this electrolytic action. The first to be considered is the resistance of the tissues, which, of course, varies for the different structures through which the current passes, and while we are not able to estimate this for different tissues and perhaps different individuals, we do know that all of the current does not follow the path of least resistance; for example, if we have two substances, one of 1 ohm resistance and the other of 1000 ohms, the current will pass through the higher resistance in inverse proportion to the lesser. We have next to take account of the diffusion of the current. This is probably about equal to the diffusion which takes place when a current passes through the earth; at least we have no better way of estimating it. An electrical current passing through the earth between points one mile apart is diffused about 1100 feet each side from the center, or a lateral diffusion of rather more than one-third of the linear distance, and forms an almost perfect ellipse. There is a large conducting area for the current as soon as it leaves the needle, and, further, the current does not all pass from the needle on the side toward the other pole, and in the use of electricity in the treatment of disease it is rarely possible to place the two poles in the most favorable position to obtain least diffusion. It would seem to follow from this that the best results would be obtained when it was possible to concentrate the current, and this has been the result of experience in other branches of medicine.

After this brief allusion to some of the factors which influence electrolytic action in the tissues of the human body, we will now consider the direct effect when a positive electrode of copper or other metal is used. If a copper needle is used for the positive pole, we should expect to have formed an oxygen and chlorin compound of copper, and this was the salt that Cheval and Bayer found, by chemical analysis, deposited on the positive pole. If another metal is used—with the exception of platinum, which is not affected by the gases liberated by the electrical current—we should get a salt with the metal used as a base. It has been claimed that the oxychlorid of copper is soluble in the lymph plasma, and some writers think that the beneficial results are obtained by the diffusion of this solution of the oxychlorid of copper through the tissues. We will speak of the solubility of this salt in connection with the inquiry into the amount of copper salts which may be obtained by electrolysis. It is interesting to inquire how much of this salt is deposited in the tissues during an ordinary treatment by electricity. According to Park Benjamin, one ampere flowing for one hour would liberate 1 1/10 grams of an —ic salt, or 2 3/10 grams of an —ous salt. It is quite probable that the salt formed in the tissues is a mixture of the two, and we will call it, speaking roughly, 20 grains of the combined salt. Twenty milliamperes, which is a very liberal dose of electricity, would therefore liberate one-fiftieth of 20 grains in one hour, and in ten minutes, the usual length of the sitting, one three-hundredth part of 20 grains or one-fifteenth part of 1 grain. To deposit 1 grain of a mixed salt of copper in the tissues would require one hundred and fifty minutes, or two and one-half hours. These figures are, of course, not absolutely accurate, but are approximately so. In this connection it is well to call attention to the question of the solubility of the oxychlorid of copper which is found deposited upon the positive pole. In Roscoe's chemistry several oxychlorids are given. He notes the most common one, which is known in commerce as Brunswick green. The oxychlorids are evidently varying mixtures of the oxid and chlorid of copper, which would, in the presence of a saline solution like the lymph-plasma, break up and the chlorid salt would be dissolved, the oxid remaining in an undissolved condition. The fact that Cheval was able to remove enough of the oxychlorid of copper from the copper needle for chemical analysis would seem to indicate that the salt which is formed upon the surface of the copper needle is insoluble. It will be seen from the varying chemical and electrolytic conditions which may influence the deposition of a salt of copper that it is manifestly impossible to determine the amount which would be left in the tissues during an ordinary treatment by electrolysis, but we may be sure that under the most favorable conditions it would be no more than the amount which I have given, and it is probably less.

It does not seem as though the deposition of an infinitesimal amount of a mixed salt of copper in the tissues could produce the immediate and lasting results which follow the interstitial application of the galvanic current; and while it is not claimed that even the small amount of copper which it may be possible to deposit possesses no remedial properties, I have not been able to detect any difference in the results when either copper, silver, steel or platinum needles were used as the positive pole, or when both poles were of the same metal. I will not weary you by giving any detailed case histories, but will simply give the summary of the cases treated: Whole number of cases treated, 15; those in which the nasal empyema was of paramount importance, 8; number treated by copper and platinum, 2; by steel and platinum, 1; by silver and platinum, 2; by platinum and platinum, 2. I took the cases in rotation from my clinic and private practice, and I am fortunate in being able to report an equal number treated by the different electrodes, except the steel. I have not included those cases where the sinus disease predominated, because I not only used electricity, but improved the drainage as well, and in some of the cases repeatedly washed out the affected sinus. I do not feel that it would add to our knowledge of the value of electrolysis as a remedial agent in the treatment of atrophic rhinitis to include the good results obtained by measures directed to the relief of the nasal empyema. Of these seven cases of atrophic rhinitis, four were relieved of the odor and crust formation in one sitting, two in three sittings, and one in five. Two of them have remained free from odor and nearly free from crust formation for fourteen months, three for eleven months, one for eight months, and one had a return in a little over two months. The cases of nasal empyema were all very much benefited by the improvement in the drainage and the washing out of the cavities involved, but, as often occurs in the treatment of nasal empyema, the discharge was not entirely stopped in all of them. There is one point that should not be neglected, namely, that the improvement in the crust formation may improve the drainage from the accessory sinuses to such a degree that the nasal empyema which is an accompaniment, if it be not a cause of the crusts, is made permanently better.

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Even if the current produced decided mechanical effect, this would not explain the results obtained by this method of treatment, for it is a well-known fact that other forms of mechanical stimulation have to be repeated at short intervals and for a considerable length of time; for instance, those who use vibratory massage in the treatment of atrophic rhinitis recommend that it be used every other day for three months, and then at longer intervals for several months more. There is every reason to believe that the galvanic current is an irritant to the nerves when it is brought in contact with them, but this irritation lasts practically only so long as the contact exists and it hardly seems possible that the application of the galvanic current would produce such lasting results. I am very well aware that the use of electricity is vaguely supposed to be beneficial in the treatment of nervous diseases, but I think that I am stating what is the general opinion of the leading neurologists when I say that, with one exception, the use of electricity is confined to diagnosis and not to treatment. The exception is the use of the faradic current in the treatment of some forms of muscular atrophy and the unanimity of opinion in regard to its use shows very conclusively that the faradic current is not of benefit in other conditions. The action of the faradic current has been defined as a mechanical massage, and this definition explains the results obtained by its use. If the action of the galvanic current in cases of atrophic rhinitis can not be attributed to any of the theories given, to what then is it due? If we go back to the explanation of the effect produced by the passage of the galvanic current we shall find that it breaks the chemical combination of the cell by its power to attract the basic elements and that they appear at the negative pole and that it repels the elements that are known as the acid-formers and that they appear at the positive pole. The effect of a current which produces therapeutic results must be the same, only to a less degree, as that which is produced by the larger volume of current. If the destruction of the tissues of the body by the galvanic current is mechanical, then the therapeutic effect is the result of mechanical action, but I think no one claims that this is so. As I said earlier in this paper, the passage of the electrical current always produces the same result, the destruction of the cells, and this is only modified in degree, but not in character, by the amount of the current which passes, and by the force which drives it through the tissues. Between the large volume of current which produces extensive destruction of tissue and the very weakest, which is practically inert, lies the therapeutic use of the galvanic current. The action of the current is probably mostly confined to the soft parts, as the periosteum is a poor conductor of electricity. In the chemical destruction of the cells of the soft parts, the weakest cells are destroyed first, and this occurs in two ways: 1, by the direct action of the current, and 2, by the action of the acid-forming elements which are liberated around the positive pole. That the bacteria are also destroyed by the same action, the examinations of Bayer would seem to indicate, as he found that the number of colonies was very much reduced after treatment by electrolysis. The source of the oxygen and chlorin which are liberated around the positive pole is very largely the lymph-plasm; this is composed of over 90 per cent. of water, holding in solution albumin, fibrin, fatty matter, extractive matter and salts of sodium, potassium, calcium and magnesia. Of these various salts, sodium chlorid occurs in the greatest quantity, being 65.2 per cent. of the inorganic salts. From this brief review of the chemical composition of the fluid upon which the galvanic current must have the greatest effect, it will be readily seen from what source the oxygen and chlorin are obtained which are liberated around the positive pole. The water and the chlorid of sodium are broken up into their constituent elements by the action of the electrical current. If an electrode of platinum is used on the positive pole the oxygen and chlorin thus liberated are free to unite with the tissues; that they remain free in the tissues or that they escape does not seem probable when we remember the avidity with which these elements unite with others to form new combinations. While these substances are formed in minute quantities, still the effect may be, and undoubtedly is, considerable. The destruction of the cells and the liberation of oxygen and chlorin around the positive pole, which unite with the other elements to form new combinations that may be, temporarily at least, acid in reaction, in my opinion, is the explanation of the results obtained in the treatment of atrophic rhinitis by interstitial electrolysis. 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Many of the writers advise placing the needle of the negative pole beneath the mucous membrane of the septum; I do not consider this a safe procedure, for the reason that the sodium and potassium which are liberated around the negative pole are active escharotics and are liable to cause the destruction of considerable tissue, and may even cause perforation of the septum. There can be no doubt that we have in interstitial electrolysis a remedial agent of undoubted efficacy and that we may confidently expect from its use, in a large percentage of the cases at least, that the odor will cease, that the crust formation will be lessened, that the nasal mucous membrane will become moist and healthy in appearance, and that the secretion will become liquefied and lose its ropy, sticky character, and that these results will last for several months. It is needless to add that this is a more favorable showing than can be secured by any other known method of treatment. Electricity will not stop the discharge when this depends upon a nasal empyema, although it may have a beneficial effect upon the crust formation even in these cases; neither will it stop the odor when that depends upon the same cause. The conclusions to which I wish to draw your attention are:

1. Electrolysis has a curative action in atrophic rhinitis in so far as it stops the tendency to crust formation and the odor, in typical cases.
2. It does not stop the discharge or the odor if these are caused by nasal empyema.
3. That better results are obtained if the needles are placed comparatively near together.
4. That it makes no difference in the result what metal is used for needles, and it therefore follows that the diffusion of the copper salt is evidently not the curative agent.
5. That the improvement in the condition of the nasal mucous membrane is most noticeable in the area around the positive pole.
6. That this improvement is probably due to the liberation of oxygen and chlorin, and the chemical change resulting from the presence of free oxygen and chlorin in the tissues or the acid reaction produced thereby.
7. That the needle of the negative pole should not be placed beneath the membrane of the septum.

I wish in closing to acknowledge my indebtedness to Dr. C. L. Sopher, of Wakefield, Mass., for his valuable assistance in collecting electrical data for this paper.

419 Boylston Street.

DISCUSSION.

DR. J. F. CULP, Harrisburg, Pa.—I was very much interested listening to Dr. Cobb's paper this morning. There is one thing he did not mention, that is, the unpleasant effect following the application of the electric current in the treatment he mentioned. Such effects are sometimes even more than unpleasant. I have personally seen this method tried and violent headache follow its application. I have seen very decided earache, and I have heard of decided syncope following the application of the current. In regard to the statistics attending this method of treatment, some of them are fallacious, for I personally know of cases that have been reported as cured, and in which the physician has spoken in the highest term of the cure, that have relapsed in a very short time after the publication of the paper reporting them. Undoubtedly there is very much in the treatment, and I think I express the opinions of some of the other members of the ASSOCIATION when I say I would like very much to hear a little more of the detail of the application of this method of treatment.

DR. EDWARD PYNCHON, Chicago—A good idea is that of having the patient attend to the cleansing part himself. I have done this, and am not afraid of having the patient use the douche twice a day, at first, perhaps, with a solution of phenol, and afterward with bicarbonate of soda, a teaspoonful to a pint. I also insist on his sniffing, every hour, a small quantity of an alkaline solution, perhaps a one-half strength of the Dobell solution. In this way I have had no trouble in controlling the ozenous condition in atrophic rhinitis or in sinus disease. In connection with the atrophy, there is almost invariably present a hypertrophic condition of the middle turbinal upon the same side, and I have had very satisfactory results by early surgical treatment of such hypertrophied body. One thing which keeps up the condition of atrophy is the fact that there is an increased current of air in the lower part of the nose, as it can not circulate in the upper part of the nose owing to the occlusion thereof.

DR. C. M. COBB, Lynn, Mass.—In regard to the strength of current and the details and unpleasant symptoms that may result, and last but not least the duration of the cure, no one claims that these cases are permanently cured. In many instances they will stay in a reasonably comfortable condition for months. If they have been using any wash or cleansing spray at all they are very likely to keep using it, and that will often deceive you as to how much you have done. I invariably tell them to do nothing with the nose, that they may blow the crusts out, but that they should not use any spray. The treatment simply prevents any secretion sticking to the mucous membrane. Whether there is just as much secretion, or whether there is more I can not say; but it does not stick and form crusts. I use a platinum needle, which is not easily affected and is easily kept clean, and does not form any oxid or other salts. One little point is that you must keep the needles apart in their course, for if you get a short circuit before the current gets into the tissues you will not get any effect. I use a rheostat like the one used by dentists. I never use an amperemeter because it is not possible for the instrument-makers to make an accurate milliamperemeter at the price they charge for them. They are approximately correct, that is, some of them are and some are not. But if you have a rheostat so you can control the current, and then turn the current on until the patient is sensible of it you will not be likely to use too much current and cause headache. Another thing, if you introduce the needles into the bone of the middle turbinated you are much more likely to give a shock to the patient. I think the nasal speculum of hard rubber is a great advantage. I have a patient under treatment, and when he asked why I did not use the battery on the other side I told him that my battery was out of order. He perhaps thinks that it is a long time being fixed, but the truth is, I wanted to see how he would do without the use of the battery. You know some believe that the treatment affects not only the side to which you apply the current, but also the other side and the pharynx as well. I do not think that this is true. In the case I have mentioned the man has one side comparatively comfortable, while the other side, to which the current was not applied, is about the same as it was before. Dr. Pynchon mentioned hypertrophy of the middle turbinated. In those cases I remove the anterior part of the middle turbinated, and it is wonderful how much of the atrophy supposed to exist in the lower turbinated disappears. The nose becomes moist and the patient is more comfortable. It is not necessary in these cases to remove the whole turbinated, but if you will cut a good sized section out of it you will improve the case in every way.

THE NATURE AND TREATMENT OF VERTIGO.*

J. LEONARD CORNING, A.M., M.D., LL.D.
NEW YORK CITY.

Among the various consequences of organic and functional disturbance of the nervous system with which we are called upon to deal, what is technically known as vertigo is surely one of the most common. Often insidious in its advent, obscure as to ultimate pathology, in its treatment baffling, it has come to be regarded as a most slippery adversary, a kind of ignis fatuus of the clinic, at the view of whose antics and illusive ways erudition and experience stand aghast.

Yet despite the unsatisfactory condition of present knowledge, there is no denying the eminent practical importance of the subject. Consider for a moment the amount of apprehension and annoyance caused by the symptom itself; then its frequency, as an accompaniment or sequence of the most disparate pathological conditions, and you will concede, I think, that a warrant is provided, sufficient to justify a careful sifting of available data, an analysis of which may incite, perhaps, to the formation of a more consistent concept of the phenomenon itself, and hence to more rational management.

Besides the more common forms of vertigo described in the books: that which accompanies disorders of the stomach; that due to lithemia—the most common of all, in my experience—that associated with disease of the inner ear—Ménière's disease—that found in chlorosis and other forms of debility, and notably in neurasthenia; that traceable to ocular difficulties; and that associated with epilepsy, toxic agencies externally or internally derived, etc., the more conventional varieties; there are many others, less commonly regarded, notably those associated with cerebral and cerebellar disease; compression of the medulla oblongata; multiple sclerosis; meningitis; spinal concussion and oculomotor paralyses.

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* *Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.*

To enter into a discussion of these individual varieties would quite transcend the limits and objects of the present paper, involving as it would the citation of an enormous array of collateral symtomatology—the symptomatology of the various diseases of which vertigo is but a single, albeit an important, symptom.

I speak advisedly of vertigo as a symptom, for the very good reason that, as you all know, there is no single lesion which may be regarded as peculiarly that of the affection itself.

Disparate, however, as are the conditions which may give rise to vertigo, I am confident that their ultimate effect upon certain important cerebral faculties must be practically the same. And, if called upon to say in few words in just what—psychologically speaking—the essence of vertigo consists, to define as far as may be the condition of the mind during vertigo, I would state that general or special perception is more or less perverted, and consciousness diminished in scope and alertness, whereby the faculty of orientation possessed by the individual—that faculty by virtue of which he is able to keep accurately informed respecting his relations to his environment—is manifestly impaired.

This statement of the author is not, however, to be received as an attempt at infallible utterance touching a matter of conceded complication; but is rather to be regarded in the light of a thesis whose tenability he will endeavor to defend by such facts and arguments as he is able, at this time, to bring forward.

In the first place, then, it were well to remember that those ganglionic mechanisms of the brain most intimately associated with perception may suffer derangement in two ways:

1. They may undergo more or less direct derangement from adverse potentialities acting within the cranial vault. Derangement of the cerebral circulation, septic influences and intracranial disease, are such causes.

2. The perceptive mechanism may be interfered with by adverse potentialities acting through the afferent nerves.

Let us consider first some of the data bearing on the second eventuality. When a person, seated in a revolving chair, is rapidly rotated he will experience, either during the continuance of such rotation or immediately upon its cessation, the characteristic symptom of vertigo. The occurrence of the phenomenon is not, however, due, as one might imagine, to the operation of the centrifugal force called forth by the rotation of the chair, but is to be ascribed largely if not entirely to the chaos engendered in the faculties of perception—general, and special also, if sight and hearing are operative—by the rapid and unusual change of place by the person experimented upon. I have been able to prove the truth of this proposition by reversing the experiment. Placing the subject in an armchair, I caused a cylindrical screen of white cloth 7 feet in diameter, suspended by a swivel from the ceiling, to rotate around him, with results identical as to character, but somewhat less in degree. In a word, vertigo usually supervened either during the rotation of the screen or immediately upon the cessation of such rotation. Naturally, such vertigo was only called forth when the eyes were open and the gaze fixed upon the rotating screen. Nor, as intimated, was it as intense as in the preceding experiment, when the subject himself was rotated; and for the very good reason, that under the last named circumstance—when the eyes are open—not only is common perception—muscular sense, etc.—but visual perception as well thrown into a condition of disarray, so that correct orientation on the part of the ego touching the topographical relations of the subject to environment is no longer possible. Surely, there can be no doubt as to the truth of deduction thus experimentally derived. Now, to take up the first eventuality—that in which vertigo is produced by intracranial causes—we find the phenomenon induced—the vertigo corresponds in all respects with that induced by the revolving chair and the revolving screen. There remains, then, no other conclusion possible than that phenomena thus identical must ultimately have a common origin. That common cause is perversion of perception, a perversion brought about in the one case through potentialities acting through the afferent nerves; in the other, by morbific elements acting upon the brain itself.

Concerning Certain Further Modifications of the Mental Faculties which Accompany Vertigo.—While, as previously shown, the proximal cause of vertigo is to be found in derangement of perception, this by no means represents the full extent of the psychical disorder. In all degrees of vertigo, but especially so in the severer ones, consciousness is always more or less impaired, such impairment being obviously the direct result of secondary confusional states engendered by the faulty percepts. Yet, while to the average physiological psychologist this secondary influence is certainly thinkable, there are—or were—not wanting some who obstinately held to the idea that in the milder forms of vertigo, at least, there was no impairment of the vividness of consciousness, nor of that alacrity of mind inseparable from vivid consciousness.

To set this matter at rest once for all, I determined, some time ago, to artificially induce rotary vertigo—the most typical form—and by noting the reaction time during the persistence of the vertigo, possess myself of infallible data on which to base a judgment.[1]

For the purpose of carrying out these investigations I designed and made use of apparatus, whose principal features are these:

An arm-chair (Fig. 1, *a.*) is supported in the center by a steel shaft, about two feet long, pointed at its lower extremity, to serve as a pivot. The shaft, at its upper end, immediately below the seat of the chair, passes through a steel ring, which receives support from a framework of iron bars (*b*); while, at its lower or pivoted extremity, a steel socket, set in the wooden cross, which serves as a base, affords the necessary fixation. Four feet from the chair, and appropriately supported by iron braces, is another shaft of steel, pivoted in like manner to that previously described, and surmounted by a wheel, provided with a crank handle (*c*).

The steel shaft supporting the chair and that surmounted by the crank wheel are provided, at their lower ends, a few inches above the wooden base, with sprocket-wheels, which in turn are connected by a stout chain.

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[1] A preliminary report of these undertakings may be found in an illustrated article, published in the New York Medical Journal, Sept. 7, 1895.

From this disposition it follows that by turning the crank handle (*c*) it is possible to rotate the chair (*a*) at such speed as the exigencies of experimentation may determine. To enable the occupant of the chair to transmit the return signal to the recording apparatus (Fig. 3), I have devised the following arrangement:

Upon the cross-bar (*Fig. 2, e*) are fastened six stout copper springs *f*, which are, in turn, connected with an equal number of binding posts (Fig. 1, *g*). These springs impinge against six circular tracks of copper (Fig. 2, *h*) secured on the under side of the bottom of the chair. Each track is carefully insulated from its fellows, and is connected by means of a gutta-percha-covered wire with one of the binding posts (g^1 Fig. 1) on the side of the chair. From this disposition it is evident that the binding posts *g* are placed in direct communication with the binding posts g^1. Now it is clear that the recording apparatus (Fig. 3) can be attached by insulated wires to the binding posts *g*; and in the same way the simple key for returning the signal (Fig. 1, *i*) may be connected with the posts *g*. For the sake of simplicity, a resonant sound, like that produced by the stroke upon a bell (Fig. 3), may be employed to give the signal. The extra binding posts are for attaching the apparatus required for the determination of the discrimination time in vertigo. This question of discrimination time I shall, however, reserve for a subsequent paper.

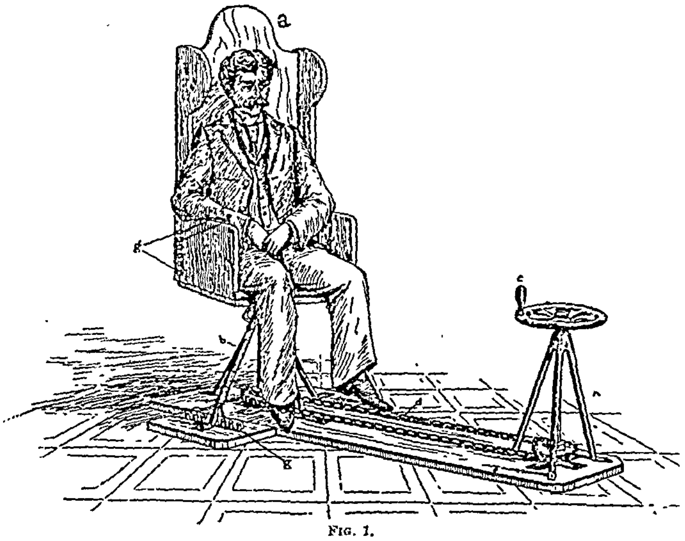

Fig. 1.

Figure 1.

The Reaction Time and Other Psychical Phenomena in Vertigo.—As some who read this may have forgotten the precise nature of what is known among psychologists and physiologists as reaction time, a word or two of explanation will perhaps prove acceptable.

It is a matter of experimental demonstration, as well as the result of ordinary experience, that mental processes of all kinds require a certain amount of time for their accomplishment. Moreover, the length of time consumed is in the direct ratio of the complexity of the mental act. To illustrate this point, let us assume that an impression is made upon the retina of the eye, and that as soon as that impression is perceived the subject presses upon the key of an electrical apparatus and so records the interval of time between the peripheral excitation and the issuance of the same in the purposive act—the so-called "reaction time." It will be found, as a result of a series of observations of this kind conducted by the aid of appropriate apparatus, that the average time in different persons is from one-tenth to two-twelfths of a second.

If, however, instead of making a single impression of uniform character upon the retina, we make heterogeneous ones, as when red and blue are displayed in indefinite order, and the subject is instructed to press the key only when the color red appears, the interval of time is at least twice as long. This additional consumption of time is due to the fact that not only is the mind obliged to take cognizance of the impressions, but to distinguish and select from them. Hence, the use of the term " discrimination time," to designate this more complicated variety of psychical reaction. As a matter of course, it is possible to determine the reaction time to touch, hearing, and sight; but in conducting such investigations it should always be remembered that the duration of the reaction period is markedly influenced by a variety of agents which interfere with the spontaneous and co-ordinate action of the cerebrospinal mechanism, and more especially of the brain. Thus the reaction time is shorter in health than in sickness, and it is longer after the ingestion of alcohol, ether, chloroform, or other agents which retard cerebral metabolism.

It follows, therefore, that by comparing the reaction time, after we have in some such way modified cerebral function, with the average normal reaction time, we shall, by a simple process of subtraction, be in a position to judge of the extent to which we have thus influenced the course of normal cerebration, particularly in its relation to the external world.

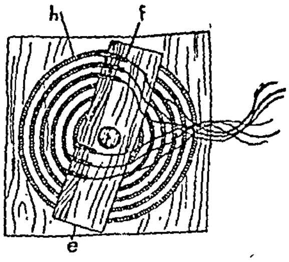

Figure 2.

To appreciate the wide significance of this fact, it must be borne in mind that the central elaboration implied by what is termed reaction time is essentially composed of the perception of a sensation originating from without and the formation thereupon of a definite volitional impulse.

The average values of reaction time are variously stated by different observers; in my opinion, those given by Waller are as nearly correct as any: to touch, 14/100 of a second; to sight, 18/100 of a second; to hearing, 16/100 of a second.

Various means of computing reaction time have been suggested and employed; that which consists in the use of an electromagnet, having upon its armature a pen to record upon a revolving cylinder the instant when a visual, touch, or auditory stimulus is applied, and the signaling (pressing of a key) by the subject when the stimulus is felt, is, in my opinion, the best.

As a result of numerous observations with this apparatus I have found that the reaction time in vertigo is increased to three-tenths and even four-tenths of a second, according to the intensity of the vertigo. I may add that this intensity is directly dependent upon the rapidity of rotation of the subject. It follows, therefore, that in the determination of the reaction time we have a means of ascertaining with scientific accuracy the degree of intensity of the vertigo. It would be a manifest omission were I not to mention that something may also be learned regarding the condition of the mind during vertigo by the aid of self-observation, though only when the rotations are relatively slow, since introspection is extremely difficult, if not absolutely impossible, when the vertigo is severe.

In this way a decided diminution in the power of attention may be observed; the subject is quite unable to carry on protracted thought so far as the analysis of external impressions is concerned; yet, in spite of all this, the power of introspection, or subjective analysis, remains but slightly impaired in minor degrees of vertigo. It is, however, curtailed and even entirely lost in severe vertigo. This loss of the power of introspection is the immediate precursor of absolute unconsciousness.

Finally, the ability to perform tasks necessitating rhythmical and delicate motor co-ordination, as in playing upon a musical instrument, is lost in the severer degrees of vertigo. It is true that it is often possible to execute a series of automatic or semi-automatic acts, as exemplified in a simple scale; but to play a composition necessitating a conscious demand of memory, or to improvise, is out of the question. This point I have tested in both violin and flute players.

In conclusion, it may be said that while there is a certain obtunding of sensibility in the severer degrees of vertigo, complete analgesia appears only with the advent of total unconsciousness.

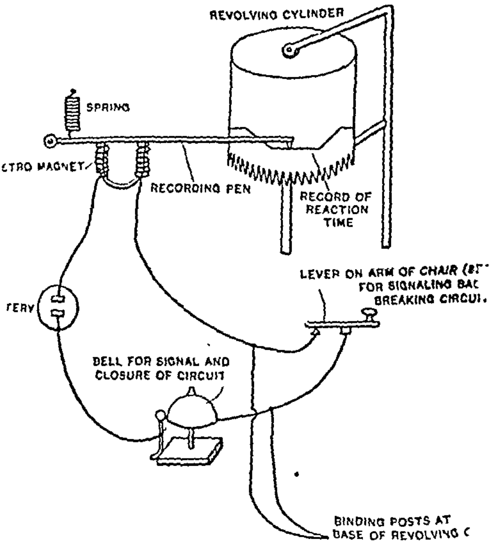

Figure 3.

Physical Phenomena Present in Rotary Vertigo.—But the reaction time is by no means the only phenomenon of which we are able to take cognizance by the aid of the rotary chair. In the first place, since the vertigo persists for a short time after cessation of rotation, it is possible to make some observations as to the subject's physical condition. Acting upon this principle, I was able to ascertain that in vertigo of moderate intensity the pulse, while somewhat increased in rapidity, is diminished in fulness. I have also observed a diminution in the rapidity of respiration; but this is not a constant phenomenon.

Again, when the vertigo is severe, the inhibitory effect of the brain upon the spinal cord is diminished to such a degree that reflex action, and especially the patellar tendon reflex, is decidedly exaggerated. There is likewise diminished vigor of voluntary muscular contraction, as shown by the dynamometer.

Finally, in severe vertigo there is apt to be a facial pallor accompanied by a marked dilatation of the pupils. Nausea, too, sometimes occurs, especially when the eyes are fixed upon surrounding objects. The last-named symptom may be avoided to some extent, by darkening the room, so that the surrounding objects are no longer visible. It is noteworthy, too, that when the object looked at it fastened to the chair, so as to revolve with it, nausea is much less readily induced.

Suppression of Vertigo Through the Monopolization of the Field of Consciousness by Vivid Sense Impressions, Particularly Those of Hearing.—There is one other suggestive and curious fact, which I have ascertained with regard to rotary vertigo, which I can not forbear communicating to you, before leaving the purely experimental side of the inquiry.

Knowing the importance ascribed—erroneously I think—to the inner ear as a part of the mechanism of equilibration; the thought occurred to me one day, to fasten a phonograph to the back of a revolving chair, and, connecting the instrument with the ears of the person experimented upon by india-rubber tubes, note any possible effects produced upon him by musical vibrations during the revolution of the chair.

Fancy my astonishment, when, after the very first attempt, the person experimented upon, a man of veracity and judgment, declared that, during moderately rapid rotation, he experienced no vertigo whatever. When, however, during the next experiment, I asked him to suddenly remove the tubes from his ears, while the chair was rotated, he declared that the vertigo immediately made itself felt with full intensity.

Wishing to determine whether such an inhibitory effect was alone obtainable through the sense of hearing, or whether the like might be brought about through vision, I removed the phonograph; had the subject hold an electric light of ten candle power in his hand and fixedly regard it while the chair was rotated at moderate speed.

Again, to my considerable surprise, he declared that he felt practically no "dizziness," although the inhibitory effect did not seem quite as pronounced as that obtained by sound impressions. I may add, as the result of further observations, that vertigo of moderate intensity only is thus capable of sensory suppression. Moreover, the acoustic and visual excitation should be intense in character—the musical vibrations loud, strident, the object looked at bright, dazzling.

These observations dispose utterly, in my judgment, of the old theory which assigns special importance to certain portions of the inner ear in connection with equilibration.

With regard to the suppression of the vertigo through vivid impressions of sight and sound, particularly the latter, the explanation is not far to seek. The morbid percepts engendered by rotation, that under ordinary circumstances would have culminated in the production of vertigo, are overborne by the vivid sense of impression, submerged, as it were beneath the vastly more intense percepts of sight or sound, which monopolize the field of consciousness completely.

Only when, as in the extreme degrees of rotary vertigo, the morbid percepts rise to such a degree of intensity as to defy neutralization, do the acoustic and visual impressions fail to inhibit.

From the foregoing experiments, which are unique in medical literature, and which offer indeed, the only means of scientifically determining very much about the nature of the phenomenon under consideration, I have felt justified in deriving the following conclusions:

1. That vertigo is primarily a derangement of perception, if a sufficiently expansive meaning be given to

the term to also include morbid impulses transmitted through afferent nerves other than those of special sensation.

2. This derangement of perception is, however, always accompanied by some impairment of consciousness.

3. This impairment of consciousness, as declared by the lethargic reaction-time and by introspection, is undoubtedly due to the confusional conditions engendered in contiguous centers of higher mental action—cortical centers, according to current physiological opinion—by the advent of the faulty percepts.

4. Vertigo may, however, be engendered by direct impairment of the functional efficiency of the centers of perception, without the intermediation of the afferent nerves. On this admission only is the vertigo accompanying auto-intoxication and that associated with intracranial disease to be accounted for.

5. Though the clinical causes of vertigo seem, at first view, irreconcilably disparate, they have at least this in common, that they one and all are capable of interfering either directly or indirectly (reflexly) with cortical function, with consequent impairment of consciousness.

6. To regard vertigo as essentially a cortical derangement, of either direct or indirect origin, accords, therefore, with the experimental data and is clinically explanatory.

7. Rotary vertigo—but only of the milder sort—may be more or less inhibited by vivid impressions, particularly those of sound, which outweigh—submerge as it were—in consciousness the vertigo, or rather the perverted percepts, which are its essential essence.

8. Finally, the impairment of consciousness, due to interference with cortical function, is in the direct ratio of the intensity of the vertigo.

Therapy.—The rather lengthy analysis, which has led up to these conclusions, has made, I fear, somewhat undue demands upon attention and time alike. I have chosen, however, rather to incur the risk of some blame on the score of prolixity than to affront scientific fitness by an empty *ipse dixit*. To have acquired, indeed, some insight into the real nature of the phenomenon we are considering; to be able, hereafter, to replace crass empiricism by rational management; to acquire, in a word, some mastery in what is concededly a baffling field, has seemed to me well worth the trouble it has cost.

If there is one thought more vividly suggested by these researches than any other it is this: That in so far as the abatement of the symptom itself is concerned, the vertigo, in short, our efforts should be immediately addressed to the cortex. Only by diminution of the susceptibility of that region to irritative influences, whether from without or within—whether due to fluctuations of the cerebral circulation, or to the presence of intracranial disease, or toxic elements in the blood, or disturbing influences transmitted through the afferent nerves—only, I repeat, by obtunding the irritability of the cortex can we hope to render the supervention of vertigo impossible, or if not altogether impossible at least unlikely.

Is this deduction, derived wholly, as it is, from pure theory, capable of further and more convincing demonstration? Or to come to the point in a few words, is the conclusion buttressed likewise by the laboratory and by the clinic?

This question I have sought to answer by experimentation on the one hand, and by an inquest into the therapeutics of vertigo, due to various pathological causes, on the other. To meet the inductive exactions of the problem, I have invoked the services of a rotary chair, which has figured so prominently in the previous experiments. Determining by the number of rotations to the minute the exact degree of vertigo it was proposed to induce, I was able to compare the sensations of the subject before and after medical interference.

The first subject, a man peculiarly susceptible, was given 40 grains of potassium bromid at 8 a.m.; at 12, this dose was repeated, with the result that shortly thereafter he displayed hebetude and marked somnolence. Hereupon, having placed him in a chair, I rotated the latter at precisely the same speed as before the ingestion of the bromid; but to his astonishment and my own gratification he declared that he experienced no "dizziness." I then considerably increased the number of rotations, but without manifest effect. Since this first and quite convincing observation, I have made similar tests with moderate inhalations of ether, nitrous oxid, and with the internal exhibition of chloralamid and trional; and while the results obtained from the last two remedies were not as striking as one might perhaps have anticipated, those from the inhalation of nitrous oxid and ether were quite satisfactory, the vertigo being practically entirely suppressed while they were exhibited. The essentially complete accord existing between these results of laboratory work and those obtained in the clinic is certainly striking. Glance through the published statistics, and con over your own experience, and you can not fail to be impressed by the fact that those remedies are most effective which, by general admission, exert a pronounced sedative effect upon cerebration, upon that higher mentalization which current physiological opinion regards as wholly, or almost wholly, traceable to cortical action—belladonna, opium, the bromids. Many can recall vividly enough, no doubt, cases of vertigo, whose very causation was a mystery, yet, cases nevertheless, in which these remedies, empirically administered, perhaps, and without even a pretense of analysis, served completely. It is, of course, not to be forgotten that what we are here principally concerned with is the symptomatic management of the affection.

When, on the other hand, we attack the problem of radical cure, of eradication of the exciting cause, we find ourselves immediately confronted by various and complicated difficulties, whereof the exhaustive consideration would require a great deal more space than that available in a paper of the compass of the present writing.

If there be feeble heart-action with consequent irregularity and lethargy of the cerebral circulation, you will think of nitroglycerin, strychnin, digitalis and other remedies of which they are the prototypes.

To combat those stomachic derangements which are such a common cause of vertigo, you will have a wide choice of expedients, to the use of which your broad experience and common sense will show the way. So, too, with the toxic varieties of the affection—those largely due to inefficiency of the excretory apparatus. Here, again, your knowledge of general medicine will stand you in good stead, both in arriving at a correct diagnosis, and deciding the question of diet and medication.

Sometimes, however, matters are not so obvious. Cast about with what diligence one may, the exciting cause refuses utterly to reveal itself. In such cases, careful attention to the condition of the eye and ear, especially of the eye, may bring the necessary information, with consequent enhancement of the chances of complete relief. Would that the opportunity of successfully coping with the affection were always as favorable! Unfortunately, as already remarked at the beginning of the argument, vertigo is not infrequently the consequent of grave organic disease of the central nervous system or of important viscera—notably of the kidney and liver. Aside from the palliative treatment usual in such cases, we may profitably seek to cope directly with the vertigo itself, along the lines already fully indicated. Indeed, it is precisely in such discouraging dilemmas that a rational insight into the true nature of the symptoms will be found most useful.

53 West 38th Street.

DISCUSSION.

DR. A. L. BENEDICT, Buffalo, N. Y., said that while this paper might equally well have been read in the Section on Physiology, it is a very valuable contribution to the study of therapeutics and, therefore, appropriate. He approves of the attitude of the writer as to the organs of special sense. There has been nothing more beautifully demonstrated in physiology than that the semicircular canals are organs of equilibrium. He was astonished to hear the reader of the paper attack the accepted view as to the action of the semicircular canals, and cited, in illustration, a personal experience: Recently, during a journey, he spent part of the night in meditating on the wonderful mechanism of the semicircular canals. When he awoke in the morning he discovered that what he thought was the front of the car was the rear and that the car was going in the contrary direction to that which he had thought. Similar experiments have made him sceptic with regard to the semicircular canals. He thinks that many of our ideas of equilibrium come from the liver. For instance, in going up and down in an elevator, the feeling is referred to just below the diaphragm. He was glad that the lecturer had taken away the old view as to the function of the semicircular canals—it is a beautiful theory, but it is not well substantiated.

DR. W. B. HILL, Milwaukee, Wis., said that the reader of the paper had illustrated the fact that all treatment should be based on physiology, which alone affords a rational basis for therapeutics.

THE PHARMACOLOGIC ASSAY OF DRUGS AND ITS IMPORTANCE IN THERAPEUTICS.*

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DETROIT, MICH.

NOTE.—The word "pharmacology" is employed as meaning "the study of the changes induced in living organisms by the administration in a state of minute division of such unorganized substances as do not act merely as foods."

After a correct diagnosis has been made, one of the most important questions to be considered by the physician is that of dosage. Especially is this true when, as often occurs, the patient's life depends upon prompt and efficient aid. But if the drugs prescribed are not of fixed and definite strength our efforts may prove utterly unavailing.

Until a few years ago we were obliged to employ pharmaceuticals of uncertain and varying strength. This variation was due not alone to differences in the process of manufacture, but also to the fact that the amount of active constituents contained in the crude drug itself varies from season to season, is modified by habitat, climatic influences, method of collecting, curing, handling, storing, etc. Where the active principles only are employed, the dose can be fixed exactly. In the case, however, of certain important drugs, such as the heart tonics, ergot, etc., a chemical assay is impossible with our present technique, owing to lack of knowledge of the active principles and of their therapeutic value, as well as to the ease with which chemical break-down occurs. Hence the question arises: "If chemical assay fails to give accurate data relative to the pharmacologic activity of a drug, by what method or methods may such information be obtained?" During the past six years I have been trying to answer this query, and desire at this time to consider briefly some of the methods of pharmacologic assay, the results obtained, and the clinical value of the drugs experimented with.

Of the many theories offered to explain the reactions between the elements of the animal body and drugs, chemical affinity seems the most plausible—the normal function of a given organ being altered in degree by the union occurring between the protoplasm of its cells and the given drug.

It is important in making comparisons of the results obtained from the administration of drugs to animals that the following be kept in mind: Since different species of animals react differently to the same drug, as they do to the same species of bacteria, it is necessary to determine by numerous experiments the type of animal best suited for the assay of each drug.

The animals employed in any pharmacologic test must be as nearly as possible of the same species, age, weight, sex, and general physical condition. The conditions obtaining in the experiments should always be constant as regards environment, food, method and time of administering the drug, length of time for making observations, reading and recording results, etc. Animals, during the time of experimentation, should be kept as nearly as possible in the natural condition. The method of administering the drug should be the one that will allow the greatest rapidity and certainty of absorption and produce the least harm to the animal.

The activity of the tested drug should be compared each time with a standard preparation which represents the active properties of a drug of average quality; the strength of the standard being determined by assaying a large number of samples obtained from different sources.

A sufficient number of animals should be employed in each test to determine the average reaction of a normal animal. Drugs should be given to animals in proportion to their weight and general physical condition. As great care should be exercised in carrying out the several steps of a given assay as in making a chemical determination.

Pharmacologic action is quantitative; in other words, the physiologic processes of the animal body are altered in degree, but not in kind, by the influence of drugs. This fact is more clearly demonstrated in healthy than in diseased subjects, the disease process or processes present often causing great variability in therapeutic results. If we could always get our tubercle cases at exactly the same stage, and if diphtheria always meant the presence of the same number of diphtheria germs, of the same virulency, and producing toxins of the same strength, etc., therapeutics would become more exact, provided our drugs were uniformly active.

Abundant evidence has been adduced to demonstrate the quantitative nature of pharmacologic reactions in normal animals. In some instances the means available for recording pharmacologic changes are more exact than in others, consequently the limits of error will be greater with some drugs than with others.

The reaction upon which to base a pharmacologic assay differs according to the nature of the drug. The minimum fatal dose, the amount of protection conferred against a poison, change in blood-pressure, general or special change in the physical condition, etc.—any one of these may be in particular instances utilized to fix the standard of strength.

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* Presented to the Section on Materia Medica, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

The following illustrations will demonstrate the reliability of pharmacologic methods as a means of determining the degree of activity possessed by a given drug. At the meeting of the Association in Denver, I gave in some detail a method for assaying strophanthus and the other heart tonics by determining the minimum fatal dose for frogs. Since then I have had abundant opportunity to verify the reliability of the method. Three tinctures of strophanthus of unknown strength which had been colored to exactly resemble each other were recently referred to me for assay. These were numbered 1, 2, and 3. In order to check the results obtained, three tinctures were prepared from these, as follows:

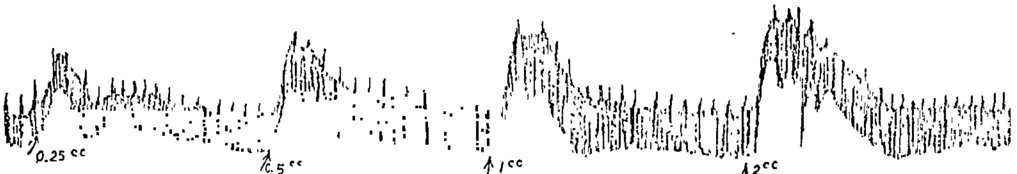

Fig. 1.—Blood-pressure tracing taken from the carotid artery of a dog anesthetized with chloretone. The suprarenal liquid was diluted with normal saline solution to 5 c.c. in each instance, and slowly injected into the femoral vein.

No. 4 = 5 c.c. of No. 1 + 3 c.c. standard tincture + 2 c.c. alcohol.

No. 5 = 5 c.c. of No. 3 + 3 c.c. standard tincture + 2 c.c. alcohol.

No. 6 = 5 c.c. of No. 1 + 5 c.c. of No. 3.

The following table gives the results reported by my assistants:

No. 1 = 50 per cent. reported strength of standard tincture of strophanthus (standard tincture of strophanthus = 0.00015 c.c., the minimum fatal dose per gm. for test frogs). Mogk.

No. 2 = 100 per cent. standard tincture. Mogk.

No. 3 = 150 per cent. standard tincture. Mogk.

No. 4 = 57 per cent. standard tincture. Actual strength 55 per cent. Variation 2 per cent. Hamilton.

No. 5 = 107.5 per cent. reported strength of standard tincture. Actual strength 105 per cent. Variation 2.5 per cent. Mogk.

No. 6 = 100 + per cent. reported strength of standard tincture. Variation less than .5 per cent. Hamilton.

The above table shows that two men assaying tinctures of strophanthus of unknown strength by the use of frogs are able to obtain results showing a maximum variation from the actual strength of only 2.5 per cent. Similar results have been again and again obtained by the application of this method.

Abel and other workers claim that the active principle of suprarenal glands, producing hemostasis when applied to mucous membranes, when injected into the circulation produces marked temporary rise in blood-pressure. That this rise in blood-pressure varies with the amount of extract injected is well shown in tracings Nos. 1 and 2, while tracing No. 3 gives the results obtained from investigation of a complaint that a certain shipment of glands from a packing house was not the genuine article. The tracings were obtained from the carotid artery of dogs anesthetized with chloretone. Microscopical and macroscopical examination showed that the complaint was well grounded, the glands being thymus instead of suprarenal. Here we have an instance of undoubted quantitative reaction from the administration of an animal substance to an animal. The details of this work are to be given in a subsequent paper.

Probably the most complicated of pharmacologic assays is the one with which the medical profession is most familiar. I refer to the assay of antidiphtheric serum by the determination of the smallest amount of serum that will neutralize a given quantity of diphtheria toxin.

The question has been raised as to whether this should be called a pharmacologic assay. It seems to me there is no ground for objection to such a classification, as both the toxin and antitoxin are "unorganized substances which produce changes in living organisms and do not act merely as foods"; moreover, the bouillon containing the toxins formed by the germ is comparable to a tincture of nux vomica or other drug, as both are solutions containing the products of vegetable cells in solution. In the one case we have the products of a plant composed of a great many cells working together; in the other instance the products are formed by many isolated vegetable cells. The antitoxin also resembles the suprarenal gland extract in that both are the products of animal cells. The medical profession the world over are agreed that antitoxin can only be assayed by experiments upon animals. In standardizing antitoxin by any of the methods now in use, at least three factors cause a variation in the results, viz., variation in the strength of the toxin, which gradually becomes weaker; variation in the strength of the antitoxin, which also gradually becomes less potent; and variation in the reaction of the guinea-pig to the toxin and antitoxin. On the other hand, in pharmacologic assay of plant drugs, only one variable factor is present, the test animal, since, as a rule, the drugs themselves retain their active properties unimpaired for a sufficiently long time to allow an assay to be made.

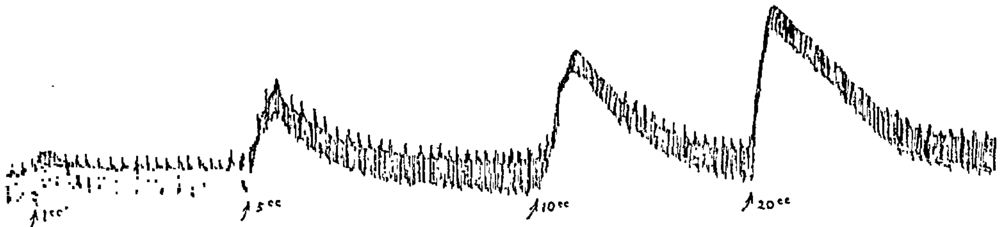

Fig. 2.—Blood-pressure tracing obtained in the same manner as No. 1. Suprarenal liquid solution was, however, more dilute than that employed in No. 1.

Other examples might be cited, but surely a careful consideration of the above results should carry conviction to an unbiased mind that it is possible to determine the pharmacologic strength of drugs from their action on the lower animals.

That, in the absence of pharmacologic assay, great variation exists in the strength of certain drugs, has been demonstrated over and over again by the physician at the bedside. One can appreciate the necessity for such an assay if it is remembered that some of the most powerful poisons known belong to the class of drugs which do not admit of chemical assay. Only a short time ago I found three samples of tincture of strophanthus, purchased in the open market, to be of the relative strength of 1 to 3 to 5. Yesterday one digitalin —Germanic—was found twice as strong as the same preparation from a different manufacturer. Tracing No. 3 indicates what might happen in the case of preparations from the suprarenal glands. Many other instances of variation in strength might be mentioned much more startling than these, some of which have been reported previously; but multiplicity of illustrations is not necessary to prove the necessity of employing, as far as possible, drugs that have been chemically or pharmacologically assayed in the treatment of disease.

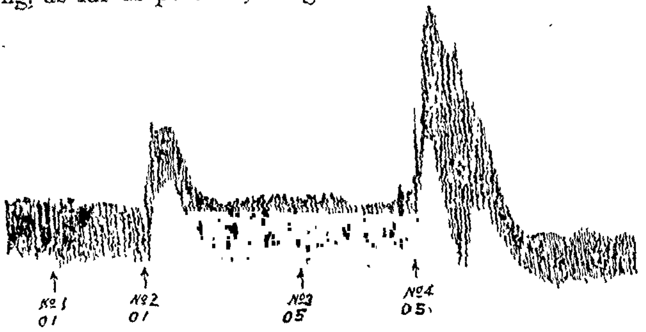

Fig. 3.—Blood-pressure tracing taken from the carotid artery of a dog. No. 1, result obtained from the injection into the femoral vein of a 0.1 c.c. of the extract submitted for assay; No. 2, result obtained from the injection of 0.1 c.c. suprarenal liquid; No. 3, result obtained from the injection of 0.5 c.c. of extract submitted for assay; No. 4, result obtained from the injection of 0.5 c.c. of suprarenal liquid with chloretone.

DISCUSSION.

DR. A. B. LYONS, Detroit, Mich., questioned the propriety of discussing a paper when the author was not present to defend it.

DR. LEON L. SOLOMON, Louisville, Ky., said that the paper raises the question on which the Convention for the Revision of the Pharmacopeia, at its last meeting, needed some light. It rejected all formulæ for standardizing by physiologic assay. The chairman of that convention did not think it was possible to standardize drugs by physiologic tests.

DR. LYONS said that he represented the chemical assay of drugs, as his experience had been in this line of work particularly, so that he would not assume to decide on the value of the physiologic assay of drugs. He would, however, state that, *generally* speaking, there is not a single chemical assay practiced that can give exact valuation of the physiologic or therapeutic effect of the drug in question, except perhaps in the case of opium. He thinks, therefore, that the chemical processes may well be supplemented by physiologic tests. He wishes to be distinctly understood as favoring the supplementing of chemical by pharmacologic tests, and insists that many of the drugs, especially animal extracts, can never be standardized in any other way. He can not understand, therefore, why the convention on revision of the U. S. Pharmacopeia so positively refused to adopt any pharmacologic tests. He said that he would endeavor to have this unreasonable taboo removed in future conventions.

DR. LEON L. SOLOMON, Louisville, Ky., said that it seemed to him that there was some sort of pressure exerted at the pharmaceutical convention against these pharmacologic tests, and that those who were most active by reason of their pressure at former pharmacopeial conventions, by their knowledge of the customs and methods, had succeeded in preventing proper consideration of this subject.

DR. C. T. MCCLINTOCK, Detroit, Mich., said that the physiologic action of a drug is not a question of opinion, but one of fact. In the case of the organic extracts this is the only possible way of proving their activity. Chemical assays may be criticized, but the rise in blood-pressure from the effects of suprarenal extract, for instance, is a matter of demonstration.

THE UNITED STATES PHARMACOPEIA OF 1900.*

PROF. JOSEPH P. REMINGTON, PH.M.,
PHILADELPHIA.

The United States Pharmacopeia occupies a unique position among the pharmacopeias of the world. Its authority is established throughout the country, mainly through the voluntary assent of the physicians and pharmacists of the United States.

It is true that the government is represented in the convention through the Departments of the Army, Navy, and Marine-Hospital Service, and the custom houses recognize the work in their regulations for the admission of drugs into the country; many of our state laws acknowledge the authority of the book by demanding a compliance with its established standards; but the fact remains that the work is not revised or published by the government, but through a representative body of physicians and pharmacists assembled in convention every ten years in the City of Washington.

The thoroughly republican method of reaching the consensus of opinion in both professions, in giving expression of these by the decennial revisions of the book, exhibits one of the best examples of effective submission to authority and is typical of the highest form of citizenship in a modern republic.

European pharmacopeias are government books and have behind them the weight of authority which the laws of the country demand. For many reasons it must be regarded as more than desirable to continue the American method of revision and publication as long as possible, and it is likely that no change will be made so long as wise, conservative and progressive counsels govern the controlling body.

The Pharmacopeia of 1890 was received, not only in this country, but abroad, as a work fully equal to any published in the world, and it is sincerely hoped that the professions of medicine and pharmacy will give to the new committee of revision appointed last month, that loyal support which was so generously extended to the old committees in former years; as is well known, the decennial convention assembled on May 2, 1900, in Washington; delegates were present from every part of the Union. Twenty-eight states were represented by delegates from various medical and pharmaceutical bodies; national organizations were represented through the AMERICAN MEDICAL ASSOCIATION and the American Pharmaceutical Association; while the government sent accredited delegates from the Army, Navy, and Marine-Hospital Service.

Medicine and pharmacy were about equally represented; fifty-seven medical colleges, medical departments of universities and state medical societies sent delegates; while fifty-nine colleges of pharmacy, pharmaceutical departments of universities and state pharmaceutical societies sent delegates.

It will be seen that the convention was a thoroughly representative one; this is further shown by the officers selected to preside over the deliberations, which were as follows: President, Dr. Horatio C. Wood, of Philadelphia; vice-presidents, Profs. A. B. Prescott, of Ann Arbor, Mich.; O. A. Wall and Drs. R. W. Wilcox, of New York, N. S. Davis, Jr., of Chicago, and A. L. Langfeld, of San Francisco; secretary, Dr. H. M. Whelpley, of St. Louis; assistant secretary, Dr. W. G. Motter, of the District of Columbia, and treasurer, Dr. Wm. M. Mew, of Washington.

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* Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

It will thus be seen that the officers represented the different sections of the country. The committee of revision, consisting of twenty-six members, was selected without geographical considerations, but solely with the purpose of selecting men who were regarded by the convention as fitted by training and technical knowledge to revise the work. Charles Rice, of New York, was unanimously re-elected chairman. Philadelphia is represented by six members, as follows: Drs. H. C. Wood, H. A. Hare, John Marshall, Professors Remington, Sattler and Kraemer; New York by six members, Drs. J. J. Abel, R. W. Wilcox, Profs. Virgil Coblentz, Gregory, E. H. Squibb and the chairman; Boston has but one member, W. R. Scoville; Baltimore, two members, Professor Caspari and Dr. Dohme; Chicago has four, Drs. N. S. Davis, Jr., and W. S. Haines and Professors Oldberg and Hallberg; St. Louis, Prof. James M. Good; Atlanta, Dr. George F. Payne; Madison, Wis., Professor Kremers; Lawrence, Kans., Prof. L. E. Sayre; Ann Arbor, Mich., Prof. A. B. Stevens; and Louisville, Prof. C. Lewis Diehl.

A constitution and by-laws were adopted at the last convention which will place the work on a more stable basis than ever before. Important changes were made in the general principles to be followed in the revision of the next Pharmacopeia, the most prominent of which are as follows:

The Committee of Revision is authorized to admit into the Pharmacopeia any product of nature of known origin; any synthetized product of definite composition which is in common use by the medical profession, the identity, purity or strength of which can be determined. No compound or mixture shall be introduced if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights.

After each pharmacopeial article—drug, chemical or preparation—which is used or likely to be used internally or hypodermically, the committeee is instructed to state the average approximate—but neither a minimum nor a maximum—dose for adults, and, where deemed advisable, also for children, in the metric system, with the approximate equivalent in apothecaries weights and measures. It is to be distinctly understood that neither this convention nor the committee on revision created by it intends to have these doses regarded as obligatory on the physician or as forbidding him to exceed them whenever in his judgment this seems advisable. The committee is directed to make a distinct declaration to this effect in some prominent place in the new Pharmacopeia.

Probably the most important work, so far as the Section on Materia Medica is concerned, is the change of policy above outlined with reference to synthetic remedies. The Pharmacopeia could never be regarded as abreast of the times if such remedies were entirely excluded. It is not the purpose of the writer to argue this much-mooted question, but the action of the committee must be regarded as wise and just.

No Pharmacopeia in the world is justified in opening its pages and giving the weight of its authority to chemicals or preparations whose formulas are secret or so controlled that their identity, purity or strength can not be determined.

It is possible that this rule may seem to work an injustice to a manufacturer who has secured a wide acceptance of his product, but who chooses for commercial reasons to keep his process or the composition secret. But, on the other hand, to open the door to one preparation which did not fall within the rule would necessarily mean the admission of an enormous flood of remedies more or less unstable in popularity and without those elements which would make a remedy useful for ten years.

Although previous conventions voted down the resolution to introduce doses into the work, the convention of 1900 was compelled to recognize the almost universal demand for this innovation; under the limitations indicated in the previous paragraph, it must be admitted that the introduction of doses will be shorn of its dangers.

An interesting discussion took place at the last session of the convention, and a resolution passed, which plainly indicates that the convention desired to have the widest publicity given to the authority of the work and no restrictions should be placed upon the proper use of the text of the book; of course the copyright will be guarded as heretofore, so as to prevent the republication of the book in its original form, but inasmuch as its authority depends largely upon the consent of "the governed," the greater publicity given to Pharmacopeia formulas must tend directly toward a general adoption of its formulas and processes.

In conclusion it may be stated that a very successful meeting was held and there is every reason to believe that the Pharmacopeia of 1900—which will probably see the light in three years from now—will be received with the same welcome which has been loyally accorded to its predecessors.

DISCUSSION.

Dr. Leon L. Solomon, Louisville, Ky., said that the wisdom of the last revision committee is very prominent in relation to the question of the introduction of doses into the United States Pharmacopeia. He recalled having seen, recently, a number of reports from societies to which the question was submitted: "Shall the Pharmacopeia prescribe doses?" This is a very important question, since there may be law-suits for damages in case some physician wished to overstep the dosage laid down by the Pharmacopeia. Therefore, he is glad to hear that the revision committee resolved to put down the average dose, but not to restrict it by giving a maximum, which properly should be left to the individual physician. The question with regard to patented synthetic articles is also important. The idea seems to be that the door should be open for the limited reception of these drugs. In the resolution passed in this Section, last year, we did not confine ourselves by words, but expressed the opinion that patented synthetics should be admitted to the Pharmacopeia, without stipulating that such articles should be in general use. This wording is surely a wise one and is worthy of the committee, which has also shown its wisdom in other directions.

Dr. A. B. Lyons, Detroit, Mich., said that, with regard to the introduction of doses of drugs, he has somewhat different views from those which prevailed in the convention. The view he entertains is that the pharmacopeia is the only authoritative standard we have in relation to drugs, in this country. Questions are continually arising as to maximum doses. While it should be left to the physician to use any dose he chooses, yet some authority should lay down some limit, so that the dangerous doses may be known. Then, if the physician has occasion to exceed that limit, he should be required to show by some mark or sign that he assumes the responsibility of the excessive dose. This is necessary for the protection of the druggist. At present the prescription comes into the pharmacy and there is no authoritative statement as to what is a dangerous dose of the agent.

The druggist knows that physicians are sometimes absent-minded, and is unwilling to put up the prescription without consulting the prescriber, and this involves delay in a case where moments may be precious. Again, if there were a standard and the druggist puts up a dangerous dose, he can be blamed for it, but if there is no standard, he can lay the blame on the physician.

Prof. J. P. Remington, Philadelphia, said that the last speaker is the author of a work on assaying of drugs, and with a chemist's demand for exactness, he desires everything reduced to a certainty. However, we know that doses can never be certain quantities. Suppose, for instance, the Pharmacopeia states that ⅛ gr. of morphin is a safe dose; every physician knows that this dose must be exceeded in many cases and, while it would be desirable for some reasons to admit doses to the U. S. Pharmacopeia, yet it might be a source of great inconvenience in actual practice. For instance, a druggist seeing an unusual dose may delay the compounding of a prescription and cause the death of a patient. He would like to ask how many physicians would engage to *always* indicate an unusual dose, by underscoring or other means, he might do it in many cases, but at some time he would be sure to overlook it and cause trouble and delay. Such a rule would also put it in the power of pharmacists to annoy the physician in a very disagreeable way, by returning a prescription, especially if he has law and authority behind him. He wished to remind the Section that for thirty years the druggists have been trying to get doses into the Pharmacopeia, and that thus far the effort has been successfully resisted by the physicians. The only way in which they can safely be introduced into the Pharmacopeia would be with the understanding that they are not to be regarded as authoritative, and this is practically what the convention ordered the committee to do, for the next Pharmacopeia.

ASTIGMATISM, ITS DETECTION AND CORRECTION.*

H. BERT. ELLIS, M.D.
LOS ANGELES, CAL.

From the standpoint of an oculist, astigmatism is that difference in the curvature of the meridians of the refracting media of an eye which causes rays of light from a point after being refracted to be focused in a line, oval or circle, but never in a point. In examining the refraction of such eyes, it is seldom necessary to study more than the meridians of greatest and least curvature, the so-called principal meridians, which are, as a rule, at right angles to one another. When the error of refraction for these has been corrected, it is corrected for all meridians excepting in cases of irregular astigmatism. Astigmatism may exist in the cornea alone, in the lens alone, or in both, while that of the cornea may be augmented or neutralized by that of the lens. We are, consequently, obliged to take under consideration the radii of curvature of the principal meridians of the whole refractive system in fitting glasses for the correction of this defect.

What method or methods shall be used to detect the full amount of astigmatism in any given eye? This is the question over which the beginner in refraction stumbles most. The methods may be divided into two broad classes: Subjective and objective, and they must be use din conjunction for the best results. Personally, I believe it best to obtain the corneal astigmatism first, and this may be measured accurately and quickly by means of an ophthalmometer, of which there are many varieties on the market, and it would be presumption on my part to say which is best. They are nearly all accurate, and so will fulfil the purpose for which they were invented. How useful is the ophthalmometer? Is it of any use? Is it not, indeed, more harmful than useful? Are not its readings more frequently misleading than time-saving? All these questions have been and are being asked of me by the young practitioner and by those who know nothing of its use except from literature. My answer has been in the great majority of cases, "I find it useful and a great saver of time." While the information gained is sometimes misleading, it is seldom so, and as a time-saver in refracting it is to me a great factor, although I should never prescribe cylinders from the ophthalmometer readings alone.

Of all methods of measuring the total amount of astigmatism certainly the most accurate, after the details of the method have been acquired, and undoubtedly, the most satisfactory to the operator, is skiascopy or retinoscopy. The patient's eyes, however, must be completely under the influence of a cycloplegic. The use of the plain mirror, the source of illumination, close to the operator's eye at a distance from the patient of 1 m., is perhaps the most satisfactory working distance and method. By this method you not only obtain the full amount of astigmatism, but also whatever other refractive error exists.

The ophthalmoscope is used to detect astigmatism, both by the direct and indirect methods, but I am free to confess that personally I should not be able to prescribe from the knowledge gained by this method, and I have always doubted the integrity of those making claims to be able to diagnose accurately low amounts of astigmatism existing in any given eye by this method.

The direct method is used by noting the difference in the strength of the glasses used to bring out distinctly the horizontal and vertical vessels in the region about the macula. The indirect method is hardly worthy of passing notice, because it is not exact and the error must be large in order to be recognized at all.

Of the subjective methods, where we depend on the answers of the patient for our information, it is hard to say which is the best, the quickest, and at the same time the most accurate. In fact, all the subjective methods are more or less slow and, at the same time, more or less inaccurate.

The old stenopeic slit method, which has almost gone out of date, has some points of excellence which make it worthy of more use than it has of late received. The fact that an astigmatic eye is able to distinguish lines which run in the direction of the focal line has been the cause of many methods being invented embodying the principle of the stenopeic slit. Dr. Edward Jackson has for years used a circular card with three parallel 2 mm. black lines with two spaces of the same width, pivoted to a disc with degree marks. Dr. James Thorington has, within the past year, called the attention of the medical profession to his pointed line test, which consists of a series of one-minute black squares, in two sets of three parallel lines at right angles to each other, mounted on a pivot and run by clock work. The perforated disc test and the Hotz test have the same principles involved. Pray's letters are too confusing as a rule to be of great practical value. The astigmatic chart, as typified by the clock face, is also going out of use very largely, except for verification.

The cobalt-blue or chromo-aberration test has some points of advantage as an ametropic test. By it the oculist may be enabled to tell at once the nature of the patient's refraction, but not the exact correction or angle of the astigmatic error.

The subjective test, which is the final court of appeal, is the trial lenses, and these are more or less involved in all the other subjective tests.

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* Read by title, in the Section on Ophthalmology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

As to the correction of astigmatism, just so much of the error should be corrected as can be worn with comfort after a few days exercise with the correction. If a compound error, where the myopia or hypermetropia and the astigmatism are of about equal amounts, the astigmatic error is of the greater import, and the ametropic conditions may be best corrected and the symptoms sometimes completely relieved by correcting the astigmatism alone; whereas, the correction of the hypermetropic or myopic error alone would leave the patient in just as great suffering as before the correction. In cases where the hypermetropia or myopia is much greater than the astigmatic error, the correction of the astigmatism alone would be of little value. So, in these cases, a portion of the hypermetropia or myopia must be corrected with the astigmatism. Where large errors of astigmatism exist and there are no symptoms referable to the eyes directly or reflexly, then the oculist is perfectly justifiable in leaving the errors uncorrected.

In presbyopic cases, however, it is the writer's opinion that in nearly every case the correction for astigmatism should be added to the presbyopia.

I suppose that we all have considerable difficulty with our lady patients in regard to their wearing spectacles. At least I find nine out of ten who beg to have nose glasses, or threaten that they will not wear the spectacles, and probably five out of ten will get the nose glasses any way. This factor, I think, is encouraged by the habit of some of the oculists in acquiescing in the whims and notions of their fair patients, and also by the habit that they have of wearing nose glasses themselves, either because of convenience or looks. I must enter my protest, however, against their use in all cases of astigmatism.

"UREINE."

EXPERIMENTS TO DETERMINE THE TRUTH OF THE *RECENTLY ANNOUNCED DISCOVERY BY MOOR OF* THE TRUE CAUSE OF UREMIA.*

JOHN WEATHERSON, C.E., M.D.
CHICAGO.

When the article by Dr. William Ovid Moor,[1] of Rome, Italy, on "The Discovery of Ureine," appeared and subsequently formed a communication to the Thirteenth International Medical Congress, Paris, 1900, it was pointed out that, if true, it was the most important contribution to urinology, of recent times.

As it offered new fields in the study of the etiology of uremia, dropsy, etc., I began experiments[2] to isolate and to determine its toxic properties.

The method given by Moor for its isolation is substantially as follows: As "ureine" is supposed to be destroyed by a temperature of 80 C., a large quantity of urine is heated at the low temperature of 50 C., until no more evaporation is seen to take place. Silver nitrate is used to precipitate the chlorids; the liquid is then cooled to promote separation of the phosphates, when both chlorids and phosphates are filtered out. The filtrate is again heated at 65 C., until no more evaporation is seen to take place. Alcohol and oxalic acid are used to precipitate the urea which is filtered out. The alcohol is evaporated at 55 C. The sulphates and remaining solids are separated out bv cooling and filtering. The color pigments are removed by treating with mercuric nitrate, neutralizing with sodium carbonate and filtering. The remaining alcohol and water are evaporated at 55 C., when nothing is supposed to remain but "ureine," a pale yellow, oily liquid of a heavy specific gravity and resembling, in aspect, olive-oil.

I have repeated this experiment again and again, following exactly the method given by Moor, and using normal urine in amounts varying from 1000 c.c. to 1700 c.c. for each experiment. I never obtained anything—except in one well-defined case which I will mention later—but a yellow alcoholic liquid which could easily be evaporated at the low temperature of 55 C., and leaving scarcely any residue.

Moor states that this mysterious organic liquid is destroyed by high temperatures, and that, to be obtained pure, an excess of reagents is to be avoided.

To know exactly when every milligram of solid substance of the urine is precipitated, without having added an excess of reagents, is no simple matter. In my later attempts to isolate this organic toxin, I employed the following method: After examining a part of a twenty-four-hour specimen of urine for specific gravity, color, amount of urea, etc., I place from 1000 c.c. to 1500 c.c. of the urine in a large porcelain evaporating dish and evaporate over a low yellow flame at a temperature of not over 50 C. A smaller dish may be used and urine added as the water evaporates. In about thirty-six hours, or as soon as no more vapor is seen to arise from the liquid, the remaining fluid is carefully treated with a saturated solution of silver nitrate until all the chlorids have been precipitated.

To exactly determine this point, I use the following test: On a watch-glass resting on white paper, place a few drops of a saturated solution of neutral potassium chromate. On to this, from time to time, add a drop of the urine and silver nitrate mixture, until a faint pink tinge appears. This pink tinge is due to silver chromate and signifies that all the chlorids have been precipitated and that a trace of excess of silver nitrate now exists. This excess is used up by adding 5 to 10 c.c. of the original concentrated urine set aside for this purpose.

The liquid is now cooled sufficiently for the separation of the phosphates and then filtered, and we wash the filter with distilled water until the liquid comes through colorless. We have now removed all of the chlorids and practically all of the phosphates. The filtrate is now put into a beaker and the water evaporated on a water-bath at a temperature of not over 65 C. To determine this point, Moor uses a large mercury thermometer, placed in the liquid and rapidly withdrawn at 65 C., from time to time. He says a puff of vapor will be seen to arise from the bulb as long as any water remains,

To the remaining liquid add one-half its volume of absolute alcohol. Moor now adds 1 gram of pure powdered oxalic acid for each 100 c.c. of urine used in the experiment. He then carefully adds an alcoholic solution of oxalic acid, stirring and allowing the precipitate to settle after each addition, until all the urea has been precipitated as oxalate of urea. I did not add any specific amount of oxalic acid, since this would vary as the percentage of urea of different urines varied, but I carefully added the oxalic acid and made the following test for excess: On a watch-glass resting on black paper, place a few drops of silver nitrate solution. To this, from time to time, add a drop of the liquid until a white precipitate occurs. This white precipitate is not due to chlorids, since they have been removed, but to silver oxalate ($Ag_2C_2O_4$), and signifies that all the urea has been precipitated, and that a trace of excess of oxalic acid now exists. This excess is used up by adding a few cubic centimeters of the liquid set aside for this purpose. Filter out the oxalate of urea and wash with absolute alcohol. Evaporate at 55 C. The sulphates and remaining solids may largely be removed by cooling and filtering, using alcohol freely to aid filtration. Next, to remove the coloring matter, treat the filtrate carefully with a saturated solution of mercuric nitrate $[Hg(NO_3)_2]$ until no more precipitate occurs.

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* Read before the Chicago Medical Society, Feb. 21, 1901.

[1] Medical Record, Sept. 1, 1900.

[2] These experiments were performed in the laboratory of Dr. Wm. E. Quine, of which I have charge.

To determine this point I use the following test: On a watch-glass resting on white paper, place a few drops of a strong solution of potassium iodid. To this, from time to time, add a drop of the liquid until an orange or red precipitate appears, which is due to mercuric iodid. This signifies that all the pigment has been precipitated and that a slight excess of mercuric nitrate now exists, which is used up by adding a few cubic centimeters of the filtrate which has been set aside for this purpose. Now neutralize with sodium carbonate, testing with red and blue litmus paper. Filter again and evaporate at 55 C. Pure "ureine" is now supposed to remain.

This method is exactly the method given by Moor, except the tests for excess of reagents, which I have added. This method could be improved upon by using barium chlorid to precipitate the sulphates, instead of trusting to concentrating, cooling, filtering, etc.

I have repeated this experiment, with the refinements here given, many times, and have never obtained anything but clear yellow water and alcohol, which could easily be evaporated at the low temperature of 55 C.

Not succeeding in proving that the "ureine" of Moor is a constituent of urine, I began a series of experiments to prove that it is not. In this I was more successful.

1. Moor, in his publication, assumes that all the water of the urine is evaporated, when he can no longer see vapor arising from the bulb of a large mercury thermometer which is rapidly withdrawn from the liquid when at a temperature of 65 C. It will be remembered that he performed his experiments during the hot summer months. If he had performed them in winter, and as soon as evaporation appeared to cease he had opened his windows to chill the atmosphere of his laboratory, he would have discovered watery vapor arising long after it ceased to be visible in a warmer atmosphere. It is well known that the watery vapor of expired air of man and animals, which can not be seen in summer, is plainly visible on a cold wintry day. Again, he fails to consider the considerable amount of water which would be retained in thick concentrated urine as water of crystallization and which is very hard to drive off at the low temperature of 55 to 65 C.

Water is no doubt present long after Moor assumes it to be absent. But I have been able to evaporate 1600 c.c. of urine on a water-bath, at the low temperature of 55 C., to the consistency of a thick syrupy mush, amounting in volume to not more than two ounces, and driving off nearly all the liquid except what was retained as water of crystallization. The evaporation required several days, but the temperature was never near the point required to decompose "ureine" (80 C.) if any had been present.

To prove that the remaining fluid is water of crystallization and not an oily liquid "ureine," the following experiment is conclusive: Pour the thick syrupy mass mentioned above, from the beaker on the water-bath into a large flat dish. On cooling, the liquid crystallizes into a solid mass, which soon becomes quite hard and dry. Fifty c.c.—nearly two ounces—of liquid "ureine," which is stated to exist in normal twenty-four-hour urine, should be plainly visible if present. The volume of the entire mass which I obtained by evaporation amounted to less than two ounces.

Now, since by supposition, "ureine" is an oily liquid, which remains intact and constant, at temperatures below 75 to 80 C., and since normal urine can—except some water of crystallization—be evaporated to dryness at the low temperature of 55 C., the conclusion is irresistible that there is no such substance as liquid "ureine."

2. It is well known that the total solids of average twenty-four-hour urine amount to from 60 to 70 grams. This includes both organic and inorganic substances. Also, it is known that, of the above amount, urea constitutes about one-half or from 30 to 35 grams. Moor states that the specific gravity of "ureine" is 1270, or it is as heavy as glycerin. That is, "ureine" is nearly as heavy as urea, whose specific gravity is 1323. Yet farther along in his article he states that "ureine" exists in amount equal to twice that of urea. That scientific investigators all over the world should fail to discover an organic substance in the urine amounting to 50 to 60 c.c., which would weigh 65 to 70 grams, or as great as the total known solids, is highly improbable.

3. Moor asserts that he examined the urine of a diabetic woman and found 6 per cent. of "ureine," 2.1 per cent. of urea, and that the specific gravity was 1025 and that the total urine passed in twenty-four hours was 1250 c.c. This statement alone would condemn the article before any scientific body in existence. Let us consider it in detail.

I carefully made up two solutions as follows: Solution No. 1 consisted of distilled water, in which was dissolved 2.1 per cent. of pure urea crystals, which equalled the amount found in this diabetic urine. Solution No. 2 contained 0.9 per cent. of sodium chlorid, the normal amount for 1250 c.c. of urine. By the Mohr-Westphal balance I found: Specific gravity of Solution No. 1 = 1005.5; of solution No. 2 = 1006.5 The formula for the specific gravity of mixtures gives slightly higher values.

To find what the specific gravity of a solution containing water and 6 per cent. of a liquid "ureine," whose specific gravity is 1270, would be, I make use of the following well-known formula:

$$X = (V^1 \text{ x } S^1) + (V^2 \text{ x } S^2) \div (V^1 + V^2)$$

where V^1 and V^2 represent the volume of the liquids used, and S^1 and S^2 their respective specific gravities. Substituting 94 per cent. water with a specific gravity of 1000, and 6 per cent. "ureine" with a specific gravity of 1270 we have:

$$X = (V^1 \text{ x } S^1) + (V^2 \text{ x } S^2) \div (94 + 6) = 1016,$$

the specific gravity due to "ureine" alone. This formula, while the one commonly used, is not absolutely correct when tested by experiment, because the actual volume of a mixture does not always equal the sum, in figures, of the separate volumes used. This is due to what is known in physics as "interpenetration" resulting from the porosity of substances, which exists even in liquids. But it is sufficiently correct for our purpose. We now have: Specific gravity due to 2.1 per cent. urea = 1005.5; due to 0.9 per cent. Na Cl = 1006.5; due to 6 per cent. "ureine" = 1016; total for only these *three* substances = 1028.

I have not considered the specific gravity due to sulphates, phosphates, pigments, sugar, etc., which without "ureine" would bring the specific gravity to about 1025, as Moor found it. But if 6 per cent. of a heavy liquid had been present, the specific gravity would be about 1040 instead of 1025. This experimental and mathematical check on the specific gravities is the most conclusive proof we have that the whole proposition is without foundation.

But while there is no such a single toxic substance as "ureine," it is well known that normal urine is toxic. That it is not due to urea or uric acid has been proved many times. Bouchard states that there are at least seven different toxic agents in normal urine. None of these have been completely isolated. Their sum-total, including pigment, however, amounts to but a few grams.

It has been found by experiment that an aqueous extract of the urine, when injected into rabbits, causes contraction of the pupils and convulsions, but no coma: while an alcoholic extract of the urine causes deep coma, but no convulsions nor contraction of the pupils.

Since we have shown that Moor probably did not drive off all the water of the urine by evaporating at low temperatures, and since he used alcohol freely in all his experiments, and since the rabbits into which he injected his supposed "ureine" died with both coma and convulsions, the irresistible inference is that Moor's "ureine" is a mixture of aqueous and alcoholic extracts of the several toxic ingredients of normal urine. His 50 to 60 c.c. of "ureine" probably consisted of water and alcohol, in which were dissolved a little pigment with the several organic toxins, and some compound of oxalic acid.

It will be remembered that in precipitating the urea, Moor uses an alcoholic solution of oxalic acid, after he uses the powdered form, and which he makes, by dissolving 3 grams of oxalic acid in 10 cubic centimeters of hot alcohol. I made up such a solution, but used it only a few times and then only in small quantities. From Watt's "Dictionary of Chemistry," I learn that if alcohol and oxalic acid be heated together at a high temperature, one part of oxalic acid will combine with nearly the same amount of alcohol to form di-ethyl-ether, or oxalic ether, which is a colorless oil whose specific gravity is 1079. Whether true oxalic ether, or some closely related compound was formed in this case, I do not know, but at any rate when I evaporated the excess of alcohol from the solution I had made up, I found a liquid which left a permanent oil stain on paper, similar to that produced by olive-oil, but not so marked. Oxalic acid dissolved in cold alcohol did not leave these oil spots.

It is interesting to note that at the close of the second attempt at isolation which I performed by Moor's method, I found about 4 c.c. of a liquid which resembled "ureine." But this was the only time, and it was in this experiment that I used the extra quantity of the alcoholic solution of oxalic acid mentioned above. This liquid looked like olive-oil and left a permanent oil stain on paper. It did not have the odor of urine, but it was a pale-yellow color and had the aromatic odor of alcohol. This liquid I believe to be, principally, some oil closely related to oxalic ether. At any rate, a drop of it, with a drop of silver nitrate solution, gave the white precipitate of silver oxalate. It is the presence of some oxalic compound, no doubt, that leads Moor to ascribe de-oxidizing powers to "ureine," oxalic acid being a great reducing agent and readily decolorizing solutions of the permanganates. The presence of this substance, no doubt, helped to mislead Moor. Again, he states that "ureine" belongs to the alcohol group of the aromatic series, and that it splits up at a temperature of about 80 C. There is undoubtedly alcohol there, because he put it there, and his statement that "ureine" splits up at 80 C. is no doubt due to the fact that the boiling point of alcohol is exactly 78.39 C. Again, he states that the characteristic odor of urine is due to "ureine." In my own experiments I found that the odor disappeared when the pigment was removed, due probably to some substance precipitated at the same time. Considerable pigment remaining, however, would give an odor, and also add toxic properties, since the researches of Ritter, Bouchard and Lenoir show that when normal urine is deprived of coloring matter its toxic powers are reduced one-third.

The subject of toxins of the urine is very interesting and highly important, but I can not see that Moor has added anything to our present knowledge of urinology.

DISCUSSION.

Dr. John A. Wesener stated that after going over Moor's article very carefully he finds that there is no chemistry whatever in his paper. In fact, it is an article made up simply of words and facts relegated to the background. He was very glad to see that the essayist has shown most emphatically the absurdity of Moor's new compound—ureine. He said that there are a few points to be considered in this article, and when these are thoroughly brought out the so-called "wonderful compound," "ureine," will immediately fade from sight. Moor says that the specific gravity of ureine is 1.27, and the amount of ureine found in the urine under normal conditions is nearly twice that of urea; therefore, assuming that we have a 6 per cent. solution of ureine, the specific gravity of that solution alone would be 1.015. It is known that when the last two figures of the specific gravity are multiplied by 2.33, and then these figures computed to the total amount of urine passed in twenty-four hours, we get approximately the total solids. Furthermore, we find that if a given quantity of urine is evaporated to dryness, and then weighed, the total solids would correspond very well with the above principle. Moor says that ureine decomposes very readily at low temperature, 80 degrees splitting it into new compounds. The speaker suggests that evaporation under those conditions should have been done in a vacuum. Moor's method of removing salts and coloring matter from the urine is a very poor and inaccurate one. Furthermore, Moor says that potassium ferrocyanid and ferric chlorid, when treated with ureine, turn blue. The speaker has always been taught that potassium ferrocyanid and ferric chlorid, when mixed, always gave Prussian blue. Moor probably means to use the red prussiate of iron instead of yellow, but even a mixture of red prussiate of iron and ferric chlorid will turn blue when treated with organic substances. For example, tincture of guaiac will change this solution to a blue color; therefore the speaker would not be surprised that the coloring matter in the urine should, when treated with these two salts, give a blue reaction.

Moor's formula of oxalate of urea can not be recognized by chemists as belonging to any known compound. How he estimated urine is beyond the speaker's comprehension. If he simply weighed the solution, then what he weighed was a most impure product. He not only weighed a certain amount of coloring matter, but also salts, which he failed to remove by his process. The statement is also made that the urine is a liquid composed of water and inorganic solids. It is known that the urine contains between 3.5 and 4 per cent. of solid matter, of which 1.75 per cent. is inorganic and 2.25 per cent. organic. Moor tells us that ureine belongs to the alcohol aromatic group, and when heated it splits into oxy-acids, etc.

Probably the most emphatic and absurd statement made by the author is that "the fermentation of urea is caused by ureine, and that bacteria alone could not bring about this change, and without ureine all organic matter would become converted into urea, which would remain in Nature without any use, and thus within a limited period of time all vegetable and animal, as well as human, life would cease." It has been shown most emphatically that pure solutions of urea are changed to ammonium carbonate by a great variety of bacteria. In order to have the fermentation brisk and rapid a certain amount of nourishment in the form of peptones, ammonia salts, glycocol, etc., is necessary. Furthermore, if a decomposed urine is precipitated with alcohol, this precipitate dried and powdered and an aqueous extract made of it, and then added to a solution of pure urea, fermentation takes place quickly, ammonium carbonate being the result.

In this particular instance the enzymes of the bacteria change the urea into ammonium carbonate.

The speaker does not think any members of the profession need have any fear that without ureine urea would remain as an end product of nitrogenous metabolism. The bacteria will very readily convert it into ammonium carbonate in spite of the fact that it is, in the opinion of Moor, a most stable compound. In fact, the air itself would in time change urea to ammonium carbonate. Bacteria not only change ammonia to nitrites and nitrates, but we have a reversible action where the nitrates are changed back to ammonia. These salts are much more stable than urea, being inorganic instead of organic.

Dr. William A. Evans said that the essayist had answered the statements of Dr. Moor so thoroughly that neither the original paper nor the refutation thereof would require any attention. From the statement, in Dr. Weatherson's paper, that urea was non-toxic, he gave some observations drawn from a paper written by Dr. Herter for the Welch "Festschrift." Since 1865, when Frerichs popularized the belief that uremia was not due to urea, there has been a growing disposition to regard this substance as almost, if not entirely, harmless. The work of Dr. Herter demonstrates that while urea is not a very actively toxic agent, and while it is readily eliminated by any one of several routes, at the same time it has some toxic action, and is responsible for some part of the symptoms known under the symptom-complex of uremia. He determined that the dog's kidneys secrete twenty times the normal quantity of urea; that ten grams of dog's kidney can secrete 1.57 grams of urea in one hour; that the kidney of the Batrachian was less efficient, and that the mammalian kidney rose in efficiency as it advanced in the scale of life. . .

It has been determined by other authorities as well as by Herter that when a large amount of urea is thrown into the circulation the amount recovered from the urine is considerably less than the amount injected. This difference represents the urea which was stored in the liver, the brain, the muscle and other structures, as well as the urea which is eliminated by the gastrointestinal tract, and the sweat glands. In 1898 Drs. Hoelscher and Wesener showed that in some cases of *chronic nephritis and* acute articular rheumatism the proportion of urea in the sweat amounted to .3 of 1 per cent. Herter and Wakeman have shown that whereas there is habitually some little elimination of urea by the gastro-intestinal tract when the percentage of urea in the blood amounts to .2 of 1 per cent., there is a great increase in gastro-intestinal elimination, accompanied by congestion of the mucosa and submucosa, dropsical accumulation in the epithelium, together with considerable desquamation thereof; that if the proportion of urea amounts to considerably above .2 of 1 per cent., the gastro-intestinal epithelium fails to eliminate urea further. In the experiments of Herter if an urea solution stronger than 4 per cent. was injected, there followed hematuria, albuminuria, decrease in the quantity of urine, and finally total suppression; that the decrease in the waters of the urine preceded the decrease in urea. It was demonstrated that in the case of dogs and monkeys convulsions, bearing a close resemblance to uremic convulsions, came on when the blood contained .3 of 1 per cent. urea, and death invariably followed when the blood contents of urea had amounted to .6 of 1 per cent. The urea in normal human blood amounts to .05 of 1 per cent. In pathologic conditions accompanied by a normal kidney epithelium, there is but little danger of accumulation of urea in the blood or in the tissues, regardless of the amount that is manufactured or absorbed. If, however, there is destruction of kidney epithelium as the result of causes acting at present, or as the result of causes previously acting, for example chronic nephritis, there is liable to be an increase in the blood-current of urea. Bradford offers a study of three cases of anuria, in which the blood percentages were .277, .324 and .44, respectively. Herter, in a study of fourteen cases of lobar pneumonia, found increases of urea ranging from an increase of 64 per cent. in one case to an increase amounting to 1200 per cent. in another. In every case of chronic nephritis examined the urea in the blood was found to be increased. He divided hs cases into three groups: The first, in which the percentage of urea in the blood was .1 of 1 per cent. or less: the second, in which it varied between .1 of 1 per cent. and .3 of 1 per cent.; the third, in which it was .3 of 1 per cent or over. The symptoms of these cases were those ordinarily recognized as the symptoms of uremia. The mode of death of the dog that died after taking unusually large injections of urea was the same as that in the condition known as uremia. It is difficult to determine whether the symptoms of uremia are due to urea or to other urinary ingredients, but it is to be remembered that in the case of the dog no urinary ingredient was injected except urea. Dr. Herter makes the statement that creatin, uric acid and other members of the xanthin group could not be the pathogenic agents in these cases. He called attention to a point that clinically has been observed most frequently by all of us, namely, that there is great difficulty in determining whether the symptoms of uremia were due to urea by quantitative examination of the urea in the urine. It would be necessary to examine the urine quantitatively for urea day by day for a considerable time, and to know with certainty how much urea was absorbed from the food, and how much was excreted by the gastro-intestinal tract and by the perspiration. As these considerations are altogether impossible, the quantitative determination of the urea in the urine gives us an altogether incomplete idea as to the amount of urea in the blood, and it is the urea in the blood and in the tissues that is responsible for any effects that urea might have.

Dr. Weatherson, in closing the discussion, stated that Professor Haines, of Rush Medical College, had been working on the same subject and had conducted a series of experiments which corroborated his own conclusions.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.[*]

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CHICAGO.

(Continued from p. 635.)

AUTHOR'S EXPERIMENTAL WORK.

The following experiments, begun nearly eighteen months ago, have been performed at the Post-Graduate Hospital and Experimental Laboratory and in the Physiological Laboratory of the Chicago University. The bacteriologic and microscopic work has been conducted entirely by my friend, Dr. F. Robert Zeit, professor of pathology at the Post-Graduate Medical School, and I gratefully acknowledge my indebtedness to him for the thorough manner in which he has performed a most ardous task.

Dogs were used for all the experiments, and chloroform was always employed for anesthesia. As the work was to include the intestinal tract, various methods of emptying the animal's bowels preparatory to the operation were tried. The administration of cathartics the day previous to the operation was a dismal failure, as a diarrhea always ensued, and even after the exercise of the greatest care liquid feces escaped through the incised gut wall. As the operation was to be upon the lower bowel, attempts were made to empty it by large rectal injections, but this method failed until it was accidentally discovered that it could be most satisfactorily accomplished on the *anesthetized* animal. The rectum and descending colon can be so thoroughly cleansed by this method as to enable one to entirely dispense with bowel clamps. This has been dwelt on at some length because fecal contamination was responsible for many deaths in the first series of cases.

The most rigid asepsis was employed in every operation. Silk ligatures and sutures were used. The abdominal wound was closed by interrupted through-and-through sutures. In the large majority of cases it was found impossible to keep the abdominal wound aseptic, and suppuration ensued, but in only a few cases was this followed by any serious results.

For the first twenty-four hours the animal was given nothing but water, and the diet was limited to milk for the next two days. After the first few days the surviving dogs were given ordinary food. After the first week the animals were allowed to run with their fellows, and no especial care was given them except to note carefully any change in their condition.

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[*] Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

In giving a detailed account of the experiments no attempt will be made to gloss over faults in technique, which, in the light of subsequent operations, were apparently inexcusable. When one form of operation failed another was tried, only to find later on that the change had been made in the wrong direction. The loss of so many animals necessitated a vast amount of work, since the main object of the experiments was to determine the ultimate effect upon the animal of uniting the urinary and digestive tracts.

Three series of experiments were conducted:

1. Bilateral uretero-intestinal anastomosis.
2. Lateral uretero-intestinal anastomosis.
3. Uretero-trigono-intestinal anastomosis.

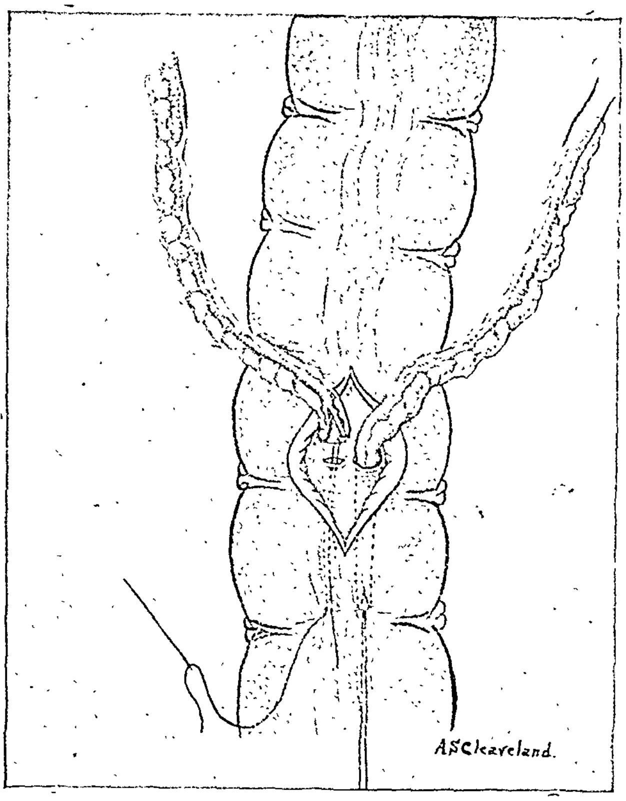


Fig. 12.—*Uretero-intestinal Anastomosis.* Serosa and muscularis incised. Ureter split and drawn through small incisions in mucosa by sutures passed through intestinal wall 1½ inches below lowest point of incision.

1. BILATERAL URETERO-INTESTINAL ANASTOMOSIS.

Both ureters were implanted simultaneously in the rectum in twenty-eight dogs, with five recoveries and twenty-three deaths. In five dogs an operation similar to that described by Fowler was employed. The serous and muscular bowel coats were incised for a number of inches and a mucous flap formed upon which the ureters were implanted and sunk in the bowel. All these dogs died in from two to five days, of peritonitis and escape of urine into the peritoneal cavity from a sloughing of bowel-flap and giving away of the stitches.

In twenty-three dogs the following plan of operation was adopted with various modifications of technique: An incision was made into the bowel-wall through the serous and muscular coats. The ureters were implanted in the rectum through small incisions made in the mucosa and either their outer coats or peritoneal coverings. The serous and muscular flap was then drawn over the ureters and secured by interrupted Lembert sutures. In some cases the ureters were passed through one and in other cases two incisions in the mucosa. Of these twenty-three cases, five recovered and eighteen died.

Causes of Death. In most of the cases death ensued from general peritonitis, usually accompanied by escape of urine into the peritoneal cavity. This escape of urine in most instances arose from a slough at the site of anastomosis. In a few cases there was a well-marked slough of one or both ureters. In three cases one or both ureters pulled out of the incision and opened into the peritoneal cavity. In three instances uremic coma, caused by acute nephritis, was responsible for death.

The ureters were, as a rule, dilated in the dogs dying shortly after the operation, although the uretero-rectal orifices were patent to a stream of water injected into the pelves of the kidneys. In the majority of instances the pelves of the kidneys were dilated and filled either with urine or purulent fluid. The split kidneys showed evidences of acute nephritis, being enlarged, soft, and intensely congested.

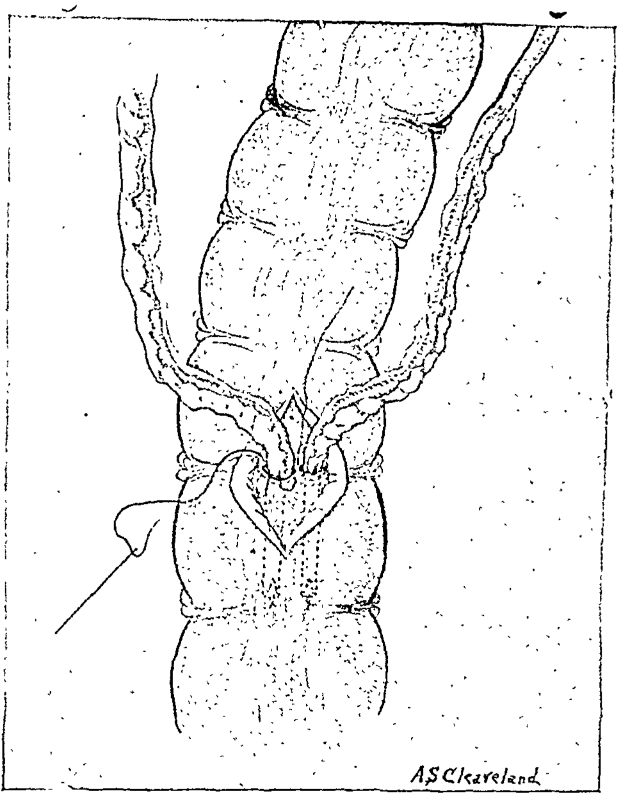


Fig. 13.—Both ureters held in place by tying of lower sutures, showing method of closing mucosa about ureter by passing sutures through mucosa and peritoneal covering of ureter.

In a few instances bacteriologic and microscopic examinations were made, although this was considered unnecessary in the other fatal cases, since the causes of death were only too apparent.

All the dogs in this series were operated upon without a proper cleansing of the rectum, and fecal extravasation through the incision made in the mucosa was extremely common. This led, in quite a number of cases, to infection of the flap and sloughing of the sutures.

At first the incisions in the bowel were made unnecessarily long and too much raw surface was exposed to the dangers of infection. The statistics improved immediately the incision was shortened.

In the first eight cases the ureter was located near the bladder and then dissected upward for a number of inches by the finger. This was a mistake, since it interfered with the ureteral blood-supply and did not leave any peritoneum on the ureteral coat.

Any failure to close securely the mucosal openings through which the ureters passed led to fecal extravasation; if they were closed too *tightly stricture* of the ureter and hydronephrosis ensued. It was soon found that the dog's ureter was extremely delicate and would not stand sutures passed through any of its coats without great danger of resulting stricture. This was obviated by passing the sutures through its fatty and peritoneal envelopes.

The chances of pulling out the ureter were found to be lessened by securely fastening the two ends of the ligature, by *means of which* the ureter was drawn through the incision in the mucosa. The greatest care was found necessary in order not to constrict the ureters by the serous sutures. A number of deaths from hydroureter and hydronephrosis were explainable from the failure to observe these precautions.

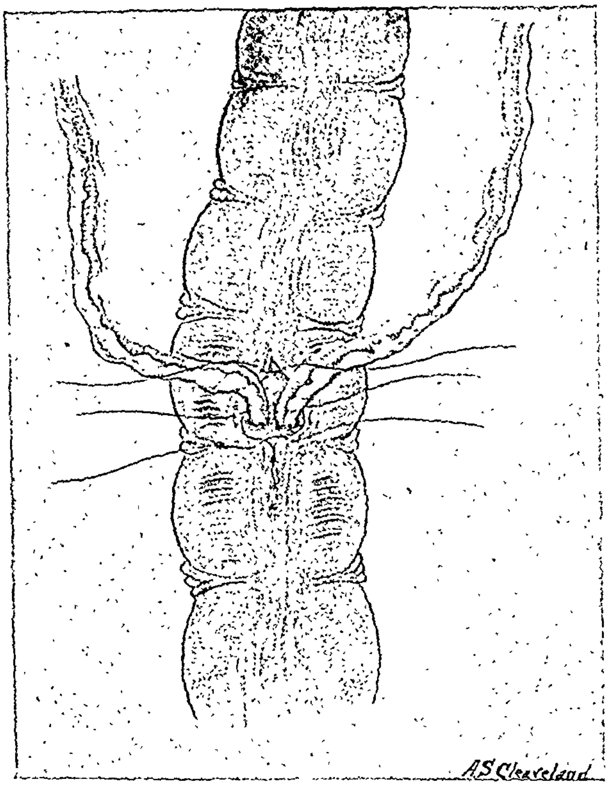


Fig. 14.—Ureters secured in position, serosa and muscularis being closed about ureters by a row of interrupted Lembert sutures.

Naturally the greatest interest centers in the five dogs that recovered from the operation, and, therefore, these experiments are given in detail.

Experiment 22. Dog I. Large black spaniel. Operation February 26, 1899. An abdominal incision was made, three inches in length, as low down as possible, and two inches to the left of the penis. The ureters were lifted up from the *bottom* of the pelvis and loosened for three inches by the scissors, care being taken to preserve a portion of the peritoneal covering. Each ureter was severed *about one and one-half* inches from the bladder and wrapped in sponges. A *one-half* inch incision was now made through the serous and muscular coats of the rectum and the two flaps separated outward by blunt dissection. A suture armed at each end with a needle was passed *through the end* of each ureter after the latter had been slit upward *one-third of an inch. Two small* one-fourth-inch incisions were now made at the lower and *outer* surfaces of the exposed mucosa. Through these openings the needles were passed and brought out of the bowel *one inch* below the point of entrance. The ligatures were now tightened and the ureters drawn downward through the incisions in the mucosa. The mucosal apertures were closed about the ureter by fine silk ligatures passed through the mucosa and outer coats of the ureter. The serosa was now closed by interrupted Lembert sutures. (See Figs. 12 to 14.)

The dog made an excellent recovery, had *good control over* his urine, which he voided, mixed with *feces, about every four* hours. One month after the operation he did not seem so well, and there was a whitish discharge from the penis, with straining and considerable pain. These symptoms increased in severity, and the dog was killed forty days after the operation.

Pathologist's Report. Post-mortem, April 26, 1899, forty days after operation. Liver, spleen, heart and lungs normal. In the rectum was a *papilla*, on the sides of *which* were two ureteral openings, both of which were *patent*. Capsules of both kidneys slightly adherent. Left kidney showed a few *yellow*ish purulent foci on cortex, with yellowish rays from pelvis to cortex. Right kidney was slightly granular. The bladder, small and contracted, contained whitish purulent fluid.

Bacteriology. Substance and pelves of kidneys free from bacteria. Bladder contained short bacilli, similar to diphtheria or streptococci, no bacteria in heart, liver or spleen.

Histology. Proliferation of interstitial connective tissue forming dense rays from papillæ to *cortex* with *retraction on* surface *of* cortex. Many dilated desquamated *tubules.* Increased connective tissue around glomeruli. Some cloudy swelling in remaining epithelium of tubules.

Experiment 25. Dog II. Large hound. Operation March 11, 1899. Technique same as in Experiment 22. This dog hardly had a sick day after the operation. April 20, was killed while fighting with a bulldog.

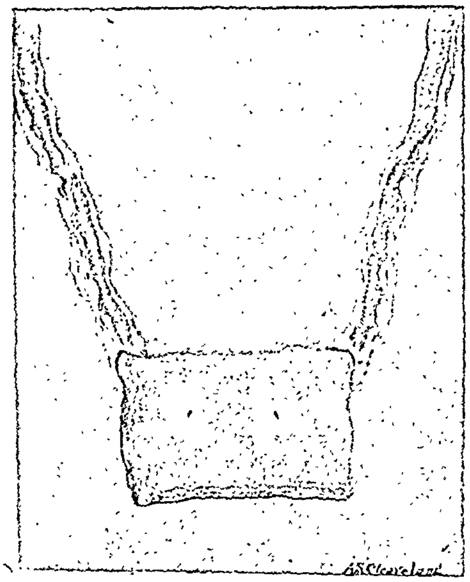


Fig. 15.—Author's modification of Maydi's operation (uretero-trigono-intestinal *anastomosis*). *Rectangular vesical flap* containing ureteral orifices. Ureters have been dissected free from their peritoneal coverings in order to be more plainly seen.

Pathologist's Report. Autopsy April 20, 1899, forty days after the anastomosis *of both ureters with the* colon, twelve inches from the anus. Pyemia; secondary infection; endocarditis. Ureters were patent and emptied into two small papillæ *in rectum* size of small peas and one-eighth of an inch apart. The intestine was studded with smaller papillæ. Left kidney: *purulent foci* in cortex. Pelvis contained purulent fluid. *Pyelonephrosis ascendens*; hydro-ureter. Right kidney apparently *normal, no* dilatation of ureter, but pyelitis present and a few purulent *foci* in *cortex*; *capsule* strips easily. Bladder was contracted and contained *purulent fluid.* Spleen soft, liver contains a few purulent foci. Heart and lungs normal except fibrinous thrombi in both ventricles extending into large vessels.

Bacteriology. Left kidney cortex, coli bacilli. Right kidney cortex, coli. Bladder: *large coli* and a few small diphtheroid bacilli and streptococci. Liver: *many coli.* Spleen: no bacteria.

Histopathology. Left kidney: hyperplasia of *interstitial* connective tissue. Walls of small blood-vessels thickened. Fatty and cloudy epithelial cells lining tubules here and there filled with granular detritus. Right kidney: interstitial infiltration *from pelvis to cortex* in narrow rays surrounded by tubules showing cloudy *swelling* and fatty degeneration of lining epithelium of convoluted tubules in places necrotic.

Experiment 18. Dog III. Small brown dog; operation February 11, 1899. Same technique as in previous experiment, except the silk stitches used to close mucosal opening took in outer coat of ureter instead of merely peritoneal and fatty coverings. Was never in as good health as dogs I and II. Gradual loss of flesh. Died May 6, 1899. Post-mortem same day.

Pathologist's Report. Died from pyemia and secondary infection eighty-four days after operation. Implantation of both ureters in rectum. Pyelonephrosis and pyoureter on right side; ureter not patent. Pyelonephritis left side; ureter patent. Spleen and liver soft, bladder contracted and filled with purulent fluid; heart contains organized thrombi.

Bacteriology. Both kidneys contain coli; bladder contains staphylococci and diplococci; unfortunately the blocks were lost, and no microscopic examinations were made of the kidneys.

Experiment 27. Dog IV. Large dog; operation April 17, 1899. Same technique as in other experiments; died May 26; attendant failed to notify pathologist until the dog was in bad condition.

Pathologist's Report. Death from pyemia and endocarditis after thirty-nine days. Implantation of both ureters in rectum; operative results good. Right kidney: pyelonephritis and pyeloureter. Left ureter normal. Both ureters patent. Bladder contracted, containing purulent fluid; endocarditis; spleen large and soft; purulent foci on surface of liver. No bacteriologic or microscopic examinations made.

Experiment 19. Dog V. Medium-sized gray bitch; operation February 15, 1899. Same technique as in other operations, except both ureters passed through one incision in mucosa and secured by sutures through mucosa and peritoneal coverings. Dog made a good recovery. Lost some flesh for first month, then remained in perfect health until killed, twelve months later.

Pathologist's Report. (Dox X, pathologic report.) Both ureters in rectum; killed after thirteen months and ten days; recovery from pyelonephritis with contracted kidney. Cultures taken while alive, under chloroform; liver and spleen normal; bladder, contracted to size of hickory nut; kidneys, capsules opaque and congested, slightly adherent, surface nodular and contracted; pelvis, opaque and thickened; radiating yellow lines from pelvis to surface of kidney. Pelvis of left kidney contains a mass of grayish concretions. Ureters: bilateral dilatation; patent. Smears and cultures from both kidneys. Spleen, liver and left ventricle were negative.

Histopathology. There is present an interstitial pyelonephritis; abscesses emptied by absorption of pus and evacuation into the pelvis of the kidney. The newly formed connective tissue has matured and contracted. Microscopically the elevated portions consist of fairly normal parenchyma. The retractions consist of new formed and matured connective tissue with atrophic glomeruli and thickened capsules in its neighborhood. The blood vessels have thickened walls. The tubules are dilated and desquamated.

The operative results in the five dogs recovering from the operation may be termed fairly good. In only one case was the ureter thought not to be patent. In all the other instances the uterers were patent and opened at the sides of small papillæ in the rectum, the openings looking not unlike the normal vesico-ureteral orifices. (See Fig. 20.) In four of the cases, however, the ureters were dilated, showing that the uretero-rectal openings had contracted. In one case pyo-ureter, and in another hydro-ureter, was noted.

Each of the five cases showed the gross lesions of an ascending renal infection confirmed in nearly every case by bacteriologic and microscopic examinations. The extent and virulence of the infection varied. In three cases it was so severe as to lead to secondary infection, endocarditis and pyemia. In one case the dog when killed was recovering from a pyelonephritis, and in the most interesting animal of the lot a complete recovery took place after the pyelonephritis, with resulting contracted kidneys. *In both these cases the cortex and* pelves of the kidneys were free from bacteria, showing that the animals had become immune to the colon bacilli. In the other cases, however, the micro-organisms were abundant and showed the presence of an active infective process.

2. LATERAL URETERO-INTESTINAL ANASTOMOSIS.

Sixteen dogs operated upon, with three recoveries. Twelve died of general peritonitis due to leakage through the stitch-holes; one died of hemorrhage.

The object of these operations was to unite the ureters to the bowel by a lateral anastomosis, so that dilatation of the ureters and ascending infection could be avoided. The task presented many technical difficulties because of the small size of the ureters even in the largest dogs, and the tendency to leakage when the through-and-through stitch was employed. The ureters were cut away close to the bladder and dissected upward for two and a half inches, together with a fold of peritoneum. A slit one-half inch in length was then made in the ureteral wall one-half inch above cut end, and the same length incision made in the serous and muscular intestinal layers. The anastomosis was made by a continuous right-angled stitch passing through the ureteral wall and the peritoneal and muscular layers of the intestine. Before the suture was drawn tight the bowel mucosa was cut the entire length of the incision. In the first two dogs recovering the mucosa was simply incised. In the last animal a portion of the mucosa was removed. The operation was completed by tying the severed ureters.

Experiment 32. Dog VI. (Dog V Pathological Reports.) Great Dane pup. Operation September 20, 1899. Lateral anastomosis of left ureter with rectum, according to method described above; mucosa simply incised.

Pathologist's Report. Dog lived sixty days. Right kidney capsule adherent, ureter dilated; nodule size of pea where ureter entered rectum. Heart: fibrinous organized clot in right auricle and ventricle. Liver covered with numerous yellowish areas.

Bacteriology. Right kidney, coli; Liver, coli.

Histopathology. Same as in dog I. Death from pyelonephritis with pyemia.

Experiment 33. Dog VII. (Dog VIII. Pathological Reports.) Yellow bitch. Operation September 22, 1899. Technique same as in Dog VI. Lost flesh, and died December 18, 1899. Autopsy, same day.

Pathologist's Report. Died eighty-seven days after operation. Right kidney, capsule adherent; pyelonephritis. Right ureter contains pus. Liver hyperemic. Heart, yellow fibrinous thrombi in left auricle and ventricle. Septic endocarditis. Death due to pyemia and endocarditis.

Bacteriology. Left heart, liver, and right kidney show coli.

Histopathology. Right kidney atrophic and granular, much interstitial hyperplasia, with contraction. Some small-cell infiltration, dilated desquamated tubules and atrophic glomeruli, with thickened capsules.

Experiment 50. Dog VIII. (Dog IX. Pathological Reports.) Operation November 18, 1899. Same technique as in other two dogs, except line of sutures protected by peritoneal flaps.

Pathologist's Report. Death due to toxemia and pyelonephritis. Ureter patent and not dilated. Left kidney very much enlarged. Pelvis dilated and filled with pus.

Bacteriologic and microscopic examinations showed findings already described in cases of pyelonephritis.

This last case has been included among recoveries, since death was due to infection and not to failure of technique. The first two cases died in sixty and eighty-seven days respectively of pyleonephritis, pyemia, and septic endocarditis. They can hardly be considered fair tests of the operation of lateral anastomosis, since the slit in the mucosa partially closed, and may have produced the dilatation of the ureter. The last case, however, was perfect from an operative standpoint, there being absolutely no obstruction to the flow of urine or dilatation of the ureter. Yet death resulted in ten days from pyelonephritis and pyemia.

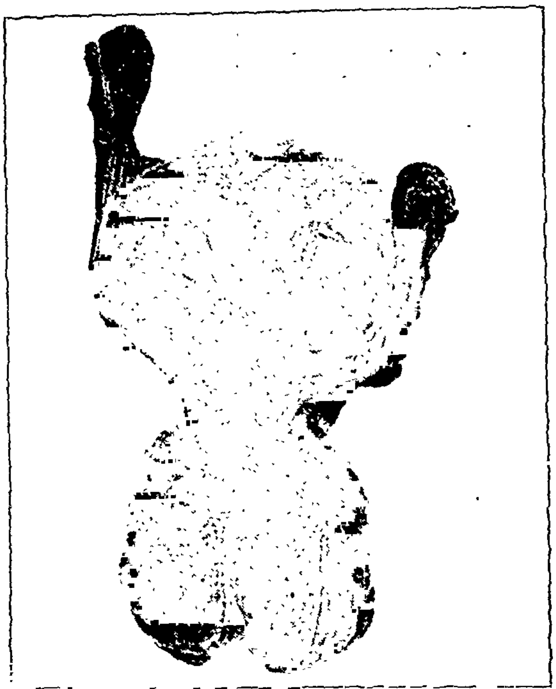
(To be continued.)

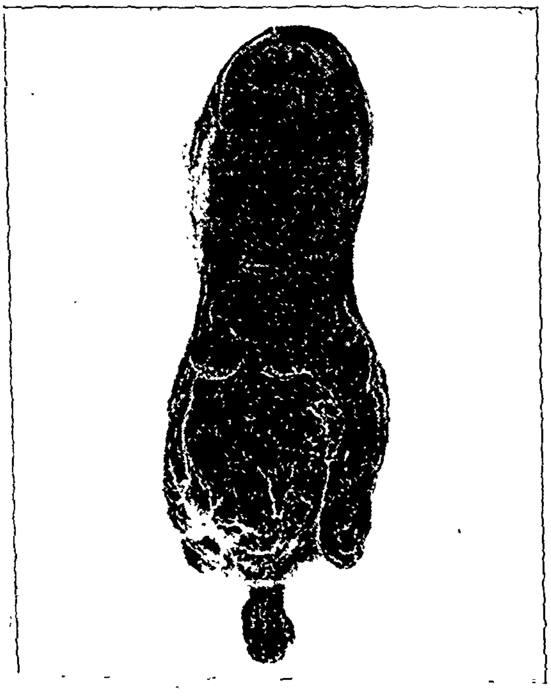
Clinical Report.

ABDOMINAL HYSTERECTOMY FOR MULTIPLE FIBROMA WITH A FIVE-MONTH GRAVID UTERUS.

GEORGE R. GREEN, M.D.
MUNCIE, IND.

On July 13, 1900, I was asked to see a married woman 28 years of age. She was confined to bed with a temperature of 101 F., irregularly enlarged abdomen, nodular in form, but with some elasticity, circumscribed peritonitis on the left side with pain and great tenderness, so much tenderness in fact as to make abdominal palpation almost valueless. Ten years ago the patient complained of a lump in her side; it remained stationary, however, or increased very little in size. Eighteen months before my visit she had married, and thirteen months later gave evidence of pregnancy, i. e., suppression of menses, morning sickness, etc. At this time this tumor—so long known to exist—began to grow rapidly and became very painful, so much so that she was finally forced to keep her bed and accept the daily use of anodynes to secure rest.





At the time of my visit she looked ill, her weight was not over 90 pounds; she was pale and weak, with rapid pulse, loss of appetite, abdominal distension and constant pain. I advised an exploration, so that, if possible, the growth might be removed, or at least its exact nature determined, explaining to the patient that the fact of a possible pregnancy would not necessarily prevent us from removing a fibroma if found advisable, her general condition being such that she would otherwise hardly live to the end of gestation.

On the morning of July 17, with the usual precautions, I opened the abdomen by a median incision and, separating some extensive adhesions on the left side and enlarging the abdominal opening, I succeeded in bringing a fibroid as large as my two fists into the opening; this was followed by another as large, and lastly, a gravid uterus studded with many other like growths of various sizes and scattered over the entire uterine wall, some subserous, others deeper. For the first time I held a living gravid uterus in my hands, and I was very forcibly impressed by the very great thinness of its walls. and if the normal uterus at term is as thin as that, I only wonder why more of them do not rupture during the violent contractions necessary in labor.

Hastily consulting with my assistants, we thought the only feasible thing to do was to remove the entire mass, uterus included. Ligating the uterine arteries, I cobble-stitched through the cervix to prevent the possibility of vaginal infection, and cut away the entire mass, cutting through the cervix close to the stitches; but little blood was lost, though the shock was profound, and after irrigating the abdominal cavity with hot salt solution, I allowed as much normal salt solution as I could to remain, and closed without drainage. Twenty-four hours later the pulse-rate was 140 and I gave, by hypodermoclysis. one quart of normal salt solution into the tissues underneath the mammary gland and requested the nurse and attending physician to repeat in eight hours and again in sixteen.

From this time the patient gradually improved and on removing the dressings on the tenth day the abdominal wound was healed. She was out of bed in four weeks and is now well. So far none of the nervous manifestations of the artificial menopause has developed.

The specimen was presented to the pathological section of the Indiana State Medical Society.

112 W. Jackson St.

Psychoses Following Operations.—At the meeting of the Edinburgh Obstetrical Society, February 13, Dr. J. Haliday Croom (*The Lancet*, March 2) read a paper on psychoses following peri-abdominal operations, and reported cases, incidentally making some remarks on operations undertaken on insane women for a cure of the mental disease. Dr. Croom considers that under no circumstances ought any insane woman to be operated on unless there is some distinct condition that is compromising life. Removal of ovaries and other operations with a view to influencing better conditions of insanity and hysteria were very unpromising. After degenerative processes have taken place in the brain, he considers it absolutely useless to look for any mental cure by any form of operative procedure. As regards the insanity from operation, his own records show five cases in a thousand abdominal sections. In looking for the causes of these mental disturbances after operation, the first factor was the hereditary one, and the second possibility was sepsis; loss of blood, defective action of the kidney, etc., also had their influence in producing mental symptoms. In removing the ovaries the climacteric was induced and the woman placed in all the possible risks of that period. Probably a neurotic constitution was an essential prerequisite for the development of post-operative insanity. For illustration of the possibilities even without operation, he reported a case of mental disturbance for menstruation, in a woman with good family history, where no operation had been performed. He calls attention to the fact that the normal functions of the uterus and ovaries are themselves not unassociated with mental aberration; alterations in the temper, actual hallucinations, disordered appetites of all kinds were occasional accompaniments of these perfectly normal processes.

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REORGANIZATION OF THE BRITISH MEDICAL ASSOCIATION.

The need of a better organization of physicians is felt in the United States, where the disadvantages of an ununited profession in the struggle against united quackery, and other evils, are every day manifest. In other countries similar evils are to be fought and like needs for organization exist; therefore, we hear of movements in the direction of furthering professional interests, such as business association, etc., in almost every quarter of the globe. Organizations and combinations are the special feature of the present day, and medicine can not be an exception to the rule. Organization to meet the new conditions as they arise is the essential to success, and this fact is apparently being more generally recognized now than at any time in the past.

The British Medical Association has been taking steps, through a strong committee, toward its reorganization, and the recommendations of the committee—its first or provisional report—are given in a supplement of forty-eight closely printed pages of the *British Medical Journal* of February 16.

At the present time the British Medical Association has, as an essential element, a system of local organizations called Branches, in which only about two-thirds of the members of the Association are included. It transacts its affairs in General Meetings and through the Council, the latter being partly representative and partly created in such a manner as to make it more or less perpetual. The powers of this body are ill-defined, although it practically controls all the affairs of the Association, the wishes of the General Meeting, as expressed by resolutions, not being necessarily respected. Nevertheless, the will of the General Meeting, if an attempt were made, would legally override that of the Council. Regarding this, the committee says: "The powers thus possessed by the General Meetings, though their exact extent has been for some years in dispute, are unquestionably great, and in view of the essential unfitness of such meetings for such duties, are a source of danger to the Association. In any association of 18,000 persons, it is impossible that all should attend a General Meeting; in the British Medical Association it is impossible that more than a very small proportion should attend such a meeting; those who attend do so on their own account without any authority or power to represent others; and thus the decisions of a very small assembly whose composition is quite fortuitous stand legally as the decisions of the whole Association. This applies to every question of policy whether concerning the internal affairs of the Association or the general interests of the profession." The committee therefore suggests that this condition should be changed. The Association, it says, has outgrown its present limitations and its plan of organization, which has not been changed since 1874.

The recommended organization includes primary units or Divisions, corresponding as nearly as possible to parliamentary districts or constituencies. A certain number of these are grouped to form a more comprehensive body called a Branch, numbering not less than 200 members. All memberships in the Association must be through these Divisions. It will be one of the duties of the Division delegate to keep a list of all the medical men in his Division territory and act as a recruiting officer for the Association. The Branch is to supervise the Division, and still above it is the General Council, made up of the delegates from the respective Branches and the general officers of the Association, subject in some respects only to the general annual business meeting. If, in its judgment, any resolution adopted by the annual general business or delegate meetings does not properly represent the wishes of the Association, it can, within certain limits as to time, refer it with its own views thereon to the consideration of the special meetings of all the Divisions, and in that case the said resolution would not be valid or binding unless it received the approval of the majority of the members present and voting in the said special meetings of the Divisions. This is the referendum feature of the plan, which, as we understand it, is a final check on the Council in all business and other matters of importance. Provisions are made for details of voting, office holding, subscriptions, etc., but the above are the leading features of the proposed reorganization that are of interest to us. On the whole, the plan seems to be a good one.

Possibly the scheme thus tentatively set forth will be more or less modified, but the fact that it has been prepared as an attempt to meet needs that exist is of interest. It is evidence that a better organization in the medical profession is a recognized necessity in Great Britain, and it may be valuable in a suggestive way to the profession in this country. It is evident that there are some difficulties ahead if the plan is to apply to England's dependencies, and some of them do not appear to us to have been fully considered. The medical profession in the Dominion of Canada, for example, would be much more advantageously affiliated with a well-organized profession in the United States than with one in a distant island with which they are only politically connected; and equally serious disadvantages appear to us possible in the government of an Antipodean profession by a predominantly insular organization. The world has not yet grown so small that distance is altogether annihilated, and sentimental British imperialism may prove less influential than local interest and feelings. A thorough local organization, however, with a general central control of such extent as will co-ordinate and economize effort, seems to be one of the best methods of meeting the needs of the profession as they arise, and such a plan as above indicated ought to fulfil this indication, perhaps better than any other.

The British Medical Association is to be congratulated on having a committee which took hold of the matter so thoroughly, and which has taken the time to present such an exhaustive and complete report. The result will be watched with interest by many on this side of the Atlantic.

PARASITIC HEMOPTYSIS.*

The discovery of the lung fluke in hogs in this country has led the zoologists of the Bureau of Animal Industry in Washington to collect the principal facts in regard to this parasite and to bring the chief features of the human form of this infection to the attention of practitioners. The disease is not discussed in our works on practice, and as cases are liable to appear in this country and to be imported by soldiers returning from Asia, we certainly owe thanks for the timely warning. As pointed out by Stiles,[1] zoology and human and comparative medicine are three closely allied callings, and the medical profession should not be backward in recognizing its indebtedness to the labors of zoologists and veterinarians.

The lung fluke is known under various names, the correct one, according to Stiles, being Paragonimus Westermanni. Perhaps the most frequent synonym is Distomum Westermanni, which is the term used by the Japanese pathologist Katsurada in a recent and valuable article.[2] Discovered by Kerbert in 1878, in a tiger, it was found afterward in man, in Formosa by Ringer, in Japan by Baelz and others. Since then it has been found in various parts of Japan, China, and Corea. The American zoologist, Ward, found it in the cat and dog, and lately it has been found in hogs by the inspectors of the Bureau of Animal Industry. It is in Japan that the disease is most common in man, there being, according to Katsurada, quite a number of endemic foci in that country, no region of which is wholly free from the infection.

The complete life cycle of the lung fluke has not yet been demonstrated. The eastern physicians regard the water-supply and mollusks as the sources of infection. Encysted or free-swimming larval forms (cercaria) will in all probability be the stage in which the parasite enters its final host—man, cat, dog, tiger, hog (Stiles). The manner in which the worm, 8 to 16 mm. long, 4 to 6 mm. broad, 2 to 5 mm. thick, enters the lung is not known. Once here the eggs are laid, which may be expectorated as such and which do not develop until they have left the host. Some observers describe the development of a ciliated embryo—miracidium—from eggs subjected to a temperature of 30 C. The fate of these embryos under natural conditions is not yet known.

The disease in man, produced by Paragonimus Westermanni, was named parasitic hemoptysis by Manson in 1880, and this is the name it seems destined to bear in English literature. As indicated by the name, hemoptysis is the chief clinical symptom. The sputum is dirty red to brown, due to the presence of the eggs, which are microscopic—about 80 to 100 mikrons long and 48 to 60 broad. Blood is present intermittently; cough is common, but not constant. As many as 12,000 eggs may be expectorated daily. It is evident that unless careful microscopic examination of the sputum is made the cases would naturally be mistaken for tuberculosis. The eggs are oval, brownish-yellow, one end being broader than the other, and provided with a thin shell. The contents are surrounded by an additional membrane and show a clear, rounded body, granular cells and clumps. The disease does not appear to be very dangerous as to life. Katsurada, in a community in which the disease is endemic, found the parasites in the lungs in but four of the cadavers subjected to autopsy in his institute. Recovery may occur and patients live for years if the eggs are confined to the lungs. Embolism of worms and eggs into the brain may take place, and cases of Jacksonian epilepsy due to this cause are described by Yamiagiwa, Katsurda and other Japanese observers. This event renders the prognosis unfavorable.

The pathologic changes have been studied, especially in Japan. Katsurada describes the lesions in four cases. Small cavities or cysts are found in the lungs, particularly under the pleura, surrounded by newly-formed tissue and containing the worms and their eggs together with detritus. The cavities communicate with bronchi, a fact that seemingly points to the bronchial tubes as the routes of entrance. It is thought that the hemorrhages result from the rupture of capillaries and smaller arteries in the walls of the cavities. The granulation tissue in the walls of the cavities not rarely contain multinuclear giant cells, which Katsurada regards as foreign body giant cells. Areas of scar tissue are also present in affected lungs. In the brain the embolized ova produce a multiple cortical encephalitis with giant cells. Similar foci containing eggs have been found in the liver, mediastinum, diaphragm, and elsewhere.

The lung fluke disease being present in the dog, cat and hog in this country, it stands to reason that infection in man may occur. Perhaps unrecognized cases already have occurred. So far no specific treatment is known. The underlying principles of an intelligent prophylaxis are indicated in what has been said in the foregoing. Stiles advances the existence of this disease as an argument for courses in tropical medicine, and certainly opportunities should exist in this country for training men for medical duties in the tropics.

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* See Editorial, xxxv, p. 1633.

[1] Proc. Phila. Path. Soc., 1901, iv, 59-79. Abstract of paper by Stiles and Hassall on The Lung Fluke, to appear in xvi, Annual Report of the Bureau of Animal Industry.

[2] Ziegler's Beiträge, 1900, xxviii, 506-523.

THE LATERAL-CHAIN THEORY OF IMMUNITY

Long before the day of bacteriology it was known that an attack of some diseases conferred protection from subsequent attack by the same disease, and various more or less fanciful explanations of this phenomenon were offered. As, gradually, it became known of a number of diseases that they were due to the action of minute forms of vegetable life, better crystallized conceptions of the disease-process, as well as those of recovery and immunity, were possible. The morbid process may be attributed to the reaction between the tissues of the invaded body and living vegetable cells, together with the products of their vital activity, and recovery and immunity, when they occur, may be considered merely as phases in this process, as a result of something added to or abstracted from the body. Much difference of opinion has existed and much discussion has been waged as to how recovery is brought about and immunity is induced. In order that the first event shall take place it is necessary for the invading bacteria to be destroyed or eliminated, and for the establishment of the second, either an antitoxin must be introduced from without or generated within the body; and it is with regard to the manner in which these results are brought about that agreement has been wanting. Of the several views put forward, that of Ehrlich has, perhaps, been received with greatest favor. This is known as the lateral-chain theory of immunity. It is based largely upon experimental evidence, and affords an ingenious explanation of the processes that are supposed to take place in the development of immunity following recovery from infectious diseases acquired naturally or induced artificially.

The cell is believed to consist of a nucleus, or central group, and to be provided with various lateral processes—in the sense in which these terms are used in organic chemistry. The cell may be injured by the entrance of the poison generated by the bacteria, in accordance with its chemical affinity, into combination with one of the numerous processes, which it does not destroy, and from which it is separable under certain conditions. This relation, which is established through a special molecular group of the toxic body, constitutes the channel through which the actual poison exerts its influence upon the central group, whose disturbance represents the true disease. If this influence is excessive the central group dies; otherwise it will do what it is physiologically accustomed to do, viz., throw off the process that has become unnecessary for its existence—by combination with the poison—and replace it by a new process—a regenerative procedure that, like all such processes, is completed only through redundancy of growth; or, as is thought by some, the detached and greatly increased lateral-chain material breaks up the combination between the poison and the cell. In this way active immunization is brought about. The chain substance generated in excess to replace chains that have become useless, and thrown into the circulation, also represents the antitoxin, which, after recovery from disease, enters into combination with the toxin by reason of its clinical affinity, and, thereby, after recovery from disease acquired naturally or induced artificially, protects the individual against the poison introduced and thus renders him immune. The blood serum of such a person, impregnated with lateral chains, is also capable, if introduced into a second person, who receives the toxin in question, of neutralizing the latter, or, if introduced subsequently to the poison, combining with it. Immunity depends upon chemical combination of the toxin with the antitoxin. In the process of active immunization the body itself prepares the immunizing material, while in passive immunization the body receives the material from an actively immunized body. In the first event the cell-body is active; in the second it is not called upon. When the cell-body has generated antitoxin for a long time the immunity is more protracted, but in the second event only so long as antitoxin can be believed to be still present in the blood. As the combination depends upon chemical affinity the immunity is specific. Only that one among the many lateral chains neutralizes the toxin that is capable of uniting with it by reason of its chemical affinity, and this relation is mutually reciprocal. The production of the immunizing substance is attributed to a nutritive function of the central group of the cell, but passive immunization is provided with the weapon for its defense by active immunization from the material that this has produced in excess of its own needs.

The lateral-chain theory of immunity has been invoked to explain also the elimination of the bacteria that must take place in order for recovery to occur. It is, accordingly, assumed that the bacteria, in accordance with their chemical constitution, cause the throwing off of a lateral chain which unites with the protoplasm of the bacteria and through the intermediation of one of its complexes attracts a fermentative substance contained in the serum which effects a solution of the bacteria.

HAZING AND MEDICAL COLLEGES.

A recent occurrence in an eastern medical college does not speak very highly for the maturity, manliness and scientific spirit of the undergraduates of the institution. A professional school is generally supposed to be free from some of the idiotic puerilities that have been so frequent in institutions for primary culture, and hazing, we had supposed, was being left in the remote past by men who had gone far enough to choose the profession of medicine. The student, however, in the college referred to, who was maltreated in a certainly unpleasant and mortifying way, and who brought his tormentors into a police court, has been ostracized, it is said, by the whole school, including his own class. The transaction does not reflect any special credit on these students.

MISSOURI'S NEW PRACTICE ACT.

While the medical practice act that has just passed the Missouri legislature is in the line of progress generally, it is to be regretted that it gives to masseurs, who call themselves osteopaths, a legal right to treat the sick in that state. Osteopathy, however, is a Missouri product, and special influences were doubtless at work in its behalf. One of the legislators, opposing the bill as a whole, in a published statement calls attention to the point that ought to have been manifest to others of his colleagues. He asks: Why are physicians of the recognized schools obliged to be examined and to pay for the privilege, while osteopaths are exempt? The bill, he says, discriminates against all schools of medicine except osteopathy, and therefore is class legislation. It would be a pity if this alleged fact should balk the purpose of the act. as he says it will, on the ground of unconstitutionality. These masseurs certainly ought to be subjected to some regulation, even in Missouri, where this latest moonshine product originated.

CONSUMPTION CURES.

Since public attention has been focused upon tuberculosis, the number of consumption cures has multiplied almost daily, and in the editorial advertisement of one of them, in a New York paper, their number up-to-date is given as 153. They range from burying in carrion, which is perhaps the most repulsive, through every possible form of remedial treatment up to the metaphysics of "Christian science," and human credulity would seem to be pretty nearly exhausted, if it were not actually inexhaustible, on this subject. It is a curious inconsistency of the human mind that it can take in at once the terror of an incurable disease, and this belief in the multiplicity of its cures. It is in fact a snatching at straws in many cases. Consumption is not an incurable disorder, and probably many more patients with tuberculous infection recover than succumb to the disease, but this is due to hygienic conditions and natural resistance; at least it has been so in the past. At the present time we are learning to utilize well-known principles in combating this disease, but specific medication for its cure does not seem to be as yet on any scientific or well-established clinical basis, though, as a lay paper says, "it is a cold day when there is no consumption cure announced."

BIOLOGIC TESTS OF THE PROTEIDS IN VARIOUS MILKS.

The most important nutritive substances in milk are the proteids. It is of essential importance for the perfection of substitutes for mother's milk that the nature of the proteid constituents of various milks is understood more clearly than heretofore. The question whether the proteids in the milk of various animals are identical may be a very important one indeed. In order to gain some insight into this problem Schütze[1] resorted to the method suggested by the experiments of Bordet, Metchnikoff and others on hemolysins, spermotoxins, etc., and injected one lot of rabbits, at frequent intervals, with increasing doses of sterilized cow's milk, a second lot with goat's milk, and a third with the milk of a woman. After about three weeks of this treatment the serum of the rabbits acquired the power of coagulating the milk with which it had been injected. But this power is specific in the sense that the serum of rabbits treated with cow's milk coagulated cow's milk only and not goat's or woman's milk, and vice versa. This shows conclusively that the proteid molecules of various milks differ from one another. It was long ago learned that patients do not utilize the milk of various animals in the same degree, some doing better than others on the same milk. Schütze also found that when milk is boiled for half an hour it is no longer coagulated by its specific lactoserum, thus demonstrating that heat greatly modifies the molecular structure of the proteids. It remains to determine the exact degree of heat necessary to sterilize milk without causing much or any change in the structure of its proteid molecules. It seems that each animal species has its own peculiar milk, and it must be regarded as settled that it is impossible to make preparations from cow's milk that will have the same composition as human milk. At the same time it is not denied that artificial feeding may give excellent results. Lactoserum may become, however, an important agent in determining the degree of exact composition of the proteids in the various preparations offered as substitutes for human milk. This biologic test again shows the manifold variety of the products of cells, and in a much more striking manner than the chemical analysis has been able to do up to the present time. It seems that Fisch,[2] by analogous experiments, obtained similar results to those of Schütze. The field offers many inviting opportunities for further studies.[3]

THE GERM OF SMALLPOX.

The germ of smallpox has heretofore received no general recognition, though the conviction that variola is a germ disease is unavoidable. The latest on this subject is to be found in the *British Medical Journal* for February 23, in which are two communications bearing on this subject. Dr. M. Funck, director of the Institut Sérothérapique, and chief of the bacteriologic laboratory of the University of Brussels, reports the results of his studies in this direction and the finding, in vaccin and smallpox pustules, of morphologically identical organisms which he considers as the cause of vaccinia and variola. These appear under three forms, representing different stages of the same protozoon: 1, an isolated green sphere showing slow movements: 2, the same infecting epidermic cells, and 3, a morula form consisting of agglomerated sporoblasts; the last is the one most frequently found in old vaccins, while the first form is more common in perfectly fresh material. The inoculation of these organisms into susceptible animals produced all the symptoms of vaccinia and the subsequent immunity. In the pustules of confluent smallpox the same elements were found and their behavior will be described in a forthcoming paper. From these facts, Funck concludes that variola and vaccinia are identical, that vaccinia is only the attenuated form of smallpox, and that the immunity it produces is not an exception to the general laws of specific immunity. The discovery of the protozoon is not claimed as a new one, as its presence in vaccin corpuscles was recognized by L. Pfeiffer—in 1887—whose work is highly spoken of by Funck. That bacteria are not the active agents in vaccinia the author considers proved by the fact that he finds vaccin matter after a certain period absolutely free from microbes, though still active, and the pustules thus produced are also themselves sterile. This seems to have some important practical bearings and probably explains the well known better action of ripened vaccin. The second communication is by Monckton Copeman, medical inspector to the local government board in England, who describes zooglea-like masses found in collodion capsule cultures of vaccin lymph sealed up and placed within the peritoneal cavities of rabbits and dogs, the method being the same as that followed by Nocard and Roux in studying the micro-organisms of bovine pleuropneumonia. The fluid contents of these capsules was found capable of producing typical vaccinia in the calf. He has since demonstrated apparently similar organisms in genuine smallpox in man. Whether these zooglea masses are the same as the third type of manifestation of the sporozoon of Funck is not entirely clear, but they are described as "made up of bodies resembling spores, only the periphery of which took the stain." There is no record of the detection of any actual microbe. It seems possible that we will at least have light thrown on the etiology of this disorder, the first in which artificial immunity was secured, but one of the last so far to evade our search for its germ.

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[1] Zeitschr. f. Hyg. u. Infektionskr., 1901, xxxvi, 5-8.

[2] St. Louis Cour. of Med., February, 1900.

[3] See also JOURNAL A. M. A., March 9, p. 672.

THE SURGICAL TREATMENT OF ASCITES DUE TO CIRRHOSIS OF THE LIVER.

It is taught generally that ascites in cirrhosis of the liver is due to mechanical obstruction of the portal circulation. Where the portal congestion is relieved through existing collateral channels, ascites may be absent. Cases of cirrhosis with ascites have been recorded in which the formation of more or less extensive peritoneal adhesions, due to repeated tappings or other causes, has been followed by recovery from ascitic accumulations. Ascites in cirrhosis of the liver may be regarded, then, as an indication that sufficient collateral circulation can not be established spontaneously, most likely on account of absence of some of the natural but inconstant communications between the portal system and the general venous system. Packard and LeConte[1] discuss the surgical treatment for the relief of the ascites of cirrhosis, brought to the attention of physicians by Talma, and first carried to a successful issue by Drummond and Morison. The various methods employed all aim at producing a collateral circulation through peritoneal adhesions. Packard and Le Conte have collected, from the literature, twenty-two cases in which surgical measures were resorted to for relief of ascites. The actual results are difficult of succinct statement, but contrasting the worst view with the best construction there is found an operative mortality somewhere between 23 per cent. and 7 per cent., and the recoveries run between 41 per cent. and 64 per cent. These statistics can not be regarded otherwise than as encouraging. The method is still on trial, and an accurate estimate of its value is not yet possible. Enough has been learned, however, to show that surgical treatment of ascites in cirrhosis is not absolutely contraindicated for the reason that removal of ascites is directly detrimental to health and life; for it has been urged by some that ascites in cirrhosis is an expression of toxemia, and that its removal would not tend to benefit the patient. Le Conte recommends that an incision be made to the left of the median line, under local or chloroform anesthesia, and that the parietal peritoneum over the liver, spleen and omentum be dried and gently rubbed with a gauze sponge, the same treatment being applied also to the surface of the organs, and the omentum stitched to the anterior abdominal wall with two or three stitches of catgut. In the meantime the ascitic accumulation may be drained off through a suprapubic opening in which a drainage-tube may be left if the latter can be cared for properly. Otherwise both wounds should be closed at once. Drainage is regarded as useful for three or four days until the adhesions become firm, but great care must be used to prevent infection. Packard and Le Conte conclude that the operation has won a distinct place, and that in the future the suitability of particular cases for the operation may be more clearly established than is the case at present. They recommend the operation in cases of pure portal cirrhosis where persistent and well-directed medical treatment is followed by insignificant results. As yet operation is not indicated in other forms of cirrhosis. In the diagnosis of cases for contemplated operation, care should be taken to eliminate syphilitic cirrhosis, in which recovery is possible under proper medicinal treatment. The relief of ascites in patients with atrophic cirrhosis would be a blessing, as otherwise constant treatment and repeated tappings are necessary and the sufferers are doomed to perpetual invalidism. The earlier the relief comes, the better, because then the liver has more of a chance to regain its functions by compensatory hyperplasia in the event that the process of contraction is brought to a standstill.

GERMAN ANTIVIVISECTION BIGOTRY.

The Prussian cultus minister, it is said, has established a detective bureau to watch all medical literature for cases of questionable operations and experiments. It is evident that the antivivisection bigotry and outcry against fictitious cruelties is not entirely confined to America, and there is some comfort in the recognition of this fact, though it does not cause any serious discomfort here so long as the antivivisectionists are unable to interfere with perfectly legitimate work, as in their ignorance they are inclined to do. The Germans have one advantage over us, however, in that these misguided enthusiasts have not been able there to interfere with necessary sanitary measures, such as vaccination, as they have to some extent in this country and in Great Britain.

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[1] Am. Jour. of the Med. Sci., 1901, cxxi, 251-270.

Medical News.

CALIFORNIA.

A quack was recently fined $100 in Los Angeles for practicing medicine without a license.

In San Jose, a man who has been travelling through the state under the title of the "Old Quaker Doctor," has been arrested, the result of investigations by a joint committee from the Pastors' Union of San Jose and the Santa Clara County Medical Society.

Three "Indian doctors," who secured the deeds to a ranch near Santa Rosa in exchange for an alleged practice in that place, and who were sued on account of misrepresentations, have been defeated in court, the deeds to the property annulled and the ranch returned to its original owners.

DISTRICT OF COLUMBIA.

Honorary Membership.—The Imperial Medical Society of Constantinople, Turkey, at its [illegible], elected Surgeon-General Wyman, of the [illegible] Service, to honorary membership. This is the oldest scientific body in Constantinople, has done much to improve the sanitary condition of the Empire of Turkey, and, as an aid to its work, receives the patronage and protection of the Sultan.

GEORGIA.

Waycross, on account of the prevalence of scarlatina, has decided to prohibit public gatherings of all kinds, including religious services, for two weeks.

A hospital for incurables was opened in Atlanta, March 2, by the Atlanta Circle of King's Daughters and Sons. It has accommodation for ten patients and is under the medical charge of Dr. James M. Brawner.

Smallpox in Atlanta is to be under the control of hospital and charities committee of the city council, provided the ordinance committee's recommendations are approved by the council. This will make the position of the local board of health rather an anomalous one.

In Atlanta, four physicians who inspected cases of smallpox were paid $190 each for the service, or at the rate of $5 a visit. The council reversed its action and requested a refund. Two doctors complied, and now the council has passed an order returning the amount refunded.

ILLINOIS.

An isolation hospital, to cost about $3000, is to be erected in Springfield.

Smallpox is reported in Anna, 50 cases; Belleville Township, several cases; Cogden, 1; Petersburg, 1 new case, and Tallula, 1 case.

The Galesburg Sanatorium has been incorporated by Dr. Ewing Van D. Morris, H. M. Chase and Fred H. Holmes, with a capital stock of $75,000.

Typhoid fever is epidemic in Rock Island. The health officer, Dr. George G. Craig, Jr., reports 376 cases of the disease between Nov. 1, 1900, and March 1, 1901. He claims that the infection is due to city water and urges that the inlet pipe be examined.

Reporting death.—A bill introduced in the assembly, March 7, provides that it shall be the duty of every surgeon who performs a surgical operation and of every physician who advises and arranges for the same, after which death results within thirty days, to report the same to the coroner of the county within twenty-four hours. It shall be the duty of the coroner to call a competent physician, who has had no previous connection with the case, to make a thorough investigation of all the circumstances before the coroner's jury and report the same as the statute provides in other cases. Violation of the provisions is made a misdemeanor punishable by a fine of $500 or thirty days' imprisonment.

Chicago.

Michael Reese Hospital was recently damaged by fire to the extent of $2000.

Dr. Christian Fenger, on account of distinguished service rendered in the United States and abroad, has been made a Knight of Dannebrog, by King Christian of Denmark; and has received the cross of that order.

Smallpox.—Only 9 new "suspect" cases of smallpox were reported during the week ended March 9 of which 7 were verified, and 6 of these were removed to the Isolation Hospital and 1 quarantined with the family at home. The mild type of the disease remains unchanged, only 1 death having occurred in the 134 cases treated since Nov. 30, 1900. The situation no longer causes the health department any anxiety.

Vital Statistics.—The mortality for the week ended March 9 was 478, equivalent to an annual death-rate of 14.18 per 1000. The chief causes of death were: respiratory diseases, including tuberculosis, 196; heart diseases, 38; nervous diseases, 31; Bright's disease, 25; violence, 26. An excess of 44 deaths over the number recorded for the week previous is interpreted by the health department as the beginning of a period of rising death rates after six weeks of unprecedentedly low winter mortality. Increased frequency of the germs of pneumonia and influenza in the laboratory examinations made for physicians indicates these as the diseases to be most dreaded and to be most guarded against.

Effects of Weather.—March weather is proverbially trying in Chicago and the catarrhal condition caused by raw winds, dampness and sudden changes of temperature favors the growth and activity of the germ of all diseases of the throat and air-passages. Hence the health department cautions against exposure to cold and wet, to the debilitating effects of overheated and poorly-ventilated rooms, street-cars and other places; and, the desirability of undereating rather than overeating at this season of the year. The observance of Lent in its dietetic feature, is a sound hygienic measure, in the opinion of the department.

INDIANA.

Dr. Hiram W. Bowman, St. Joe Station, has been appointed coroner of De Kalb County.

A public hospital is to be established in Bloomington, and the committee which has the matter in charge already has a fund of $3000.

Smallpox patients have filled the Indianapolis Isolation Hospital, and the board of health is now considering the problem of the disposition of additional cases. There are now fifty-three persons under quarantine in the city.

Indiana Medical College, Indianapolis, is to have a new building four stories in height, thoroughly equipped, heated by steam and lighted by electricity. The building committee has awarded the contract which calls for a completion of the building by September 1.

IOWA.

The County Hospital of Louisa county, at Wapello, has been completed at a cost of $10,000. It is thoroughly furnished and equipped and is ready to receive patients.

The Fairfield Hospital Association has named as members of the medical board of the hospital, Drs. J. Fred Clarke, Calvin Snook and John V. Bean, Fairfield, and Dr. Samuel K. Davis, Libertyville.

A tract of land, 200 by 300 feet, was donated by the city council of Cedar Rapids, March 9, as a site for a hospital, which is to be erected this season by the Sisters of Mercy, at a cost of not less than $50,000.

Dr. Marion R. Hammer, Newton, was found guilty of assault with intent to commit murder, March 2; the motion for a new trial was overruled, and he was sentenced on March 5, to 3½ years in the penitentiary at Fort Madison.

The medical department of the state university, at Iowa City, suffered to the extent of $200,000 by fire March 10. The medical building was entirely destroyed. As the school would have closed in three weeks, its work for the year will not be seriously crippled.

KANSAS.

Dr. Frank McCallum, Kansas City, who went as volunteer to the Philippines two years ago, has been made captain and assistant surgeon of volunteers.

One thousand cases of smallpox in the state, and 500 of these in Crawford and Cherokee counties, are given by the secretary of the State Board of Health as the number on March 7.

The State Board of Health has been named by the governor, and the recommendation sent to the senate for approval. The following are nominees: Dr. S. Jay Crumbine, Fort Dodge; Robert J. Morton, Greent; B. J. Alexander, Hiawatha; S. W. Williston, Lawrence; G. W. Hollembeak, Cimarron, and others.

MARYLAND.

Baltimore.

Dr. Aaron Friedenwald has been elected president and Dr. Abraham B. Arnold, treasurer of the Baltimore branch of the Alliance Israelite Universelle, for the ensuing year.

The Woman's Medical College celebrated the twentieth anniversary of its founding, February 22, at the college building. The committee in charge of the exercises consisted of Drs. Eugene F. Cordell, John G. Jay and Pearce Kintzing.

Mortality Rate.—The mortality from pneumonia and bronchitis has created alarm. Many physicians attributed it in large measure to unheated street-cars. From Nov. 1, 1900, to Feb. 18, 1901, there were 498 deaths from pneumonia and 102 from bronchitis. During the present session, 45 cases of pneumonia have been admitted to the Johns Hopkins Hospital, with a mortality of 28.8 per cent. Seventeen recovered by lysis.

Appointment.—Dr. Clarence B. Farrar, a graduate of the Johns Hopkins University, has been added to the staff of the Sheppard and Enoch Pratt Hospital for Nervous and Mental Disease, as clinical and laboratory assistant, and provision has been made for young graduates of medical schools, as resident assistant physicians, that they may devote themselves to the special study of nervous disorders. An effort is made to exclude all but curable patients, although a few chronic cases are temporarily admitted. The net amount received from the bequest of Enoch Pratt, after the expenses of the litigation, was $1,069,300.

Hazing by Students.—There has been trouble at the University of Maryland's School of Medicine, on account of the hazing of a freshman, who, in the dissecting room had his mustache cut off with a pair of dissecting scissors. By the advice of the Dean, as he says, he had the offender arrested and fined. This created bad feeling, and he was pelted with rotten eggs and other articles and roughly jostled on attempting to attend lectures. The medical faculty has passed resolutions forbidding the practice of hazing and authorizing the dean to suspend any student found guilty of maltreating, molesting, or in any way interfering with, any other student. The hazee now announces that he may resume his studies in a few days.

MASSACHUSETTS.

Dr. Richard H. Thompson, Malden, has been appointed city physician.

The Emergency Hospital at Springfield was opened February 26, and is under the charge of Drs. E. V. Hardwick and R. W. Brayton.

A state sanatorium for consumptives is the aim of a bill introduced by Senator Fitzgerald, which appropriates $150,000 for this purpose. The sanatorium, if established, will probably be located in the mountains in the western part of the state.

The Hospital for Consumptives, Boston, will be located on Marcella Street, and the mayor has recommended an appropriation of $80,000 for its equipment and maintenance. There are now four institutions in Boston where consumptives receive free treatment.

MICHIGAN.

Two health officers, Dr. Michael D. Ryan, president of the Saginaw Board of Health, and the health officer of Gilmore Township, Isabella County, are ill with smallpox.

Dr. Beverly D. Harison, Sault Ste. Marie, secretary of the State Board of Health, who was not reappointed by Governor Bliss, refused to surrender his office and was sustained in his claim by Attorney-General Owen, who holds that the term of office does not expire until October

The Health of Michigan.—For the month of February, compared with the preceding month, pneumonia, pleuritis, inflammation of the kidney, scarlet fever, erysipelas and whooping-cough were more prevalent; and typhoid fever, inflammation of the bowels, intermittent fever, diphtheria, smallpox and measles were less prevalent.

By the will of Mrs. Palmer, who died March 7, and who was the widow of Dr. A. B. Palmer, of the medical department of the University of Michigan, Ann Arbor, $20,000 is bequeathed to build a new ward in the hospital, and $15,000 for the maintenance of free beds in the institution.

The state contagious disease inspector, Dr. George E. Ranney, Lansing, has gone to Boyne Falls, to investigate a smallpox epidemic at that place. The disease has been diagnosed by an outside physician as chicken-pox, and the lumbermen are said to be determined to break quarantine and threaten to fight their way through if they are opposed.

MINNESOTA.

Medical inspection of schools in Minneapolis, by volunteer inspectors, commenced March 11.

A detention hospital for the temporary care of persons insane, or supposed to be, was advocated by the Ramsey County Medical Society at its last meeting.

A bill has been introduced, authorizing practicing physicians to compound medicine under the same restrictions placed on druggists without securing pharmacists' licenses.

The license and control of massage and bath parlors, faith healers and mind readers is provided for in a bill providing that the council or other governing body of any city or town may prescribe license fees and reasonable rules for their control.

The report of Health Commissioner Dr. John M. Robinson, Duluth, shows that 98 per cent. of the smallpox patients in the city had not been vaccinated within seven years, and that 267 out of the 309 patients, or 86.4 per cent., had never been vaccinated.

MISSOURI.

Lutheran Hospital, St. Louis, recently opened its new ad- [illegible] oms for private patients, a modern [illegible] dining-rooms for nurses, etc. It has been furnished by various organizations connected with the Lutheran churches of the city.

The Hall medical bill has passed house and senate and now awaits the signature of the governor to become a law. The opponents of the bill employed all the obstructive tactics known to adroit parliamentarians, without avail, and now the "Christian Scientists" have given up the fight and retired from the field.

Hospital Staff.—The German Hospital, Kansas City, has the following medical staff for the year: Drs. Julius Bruehl, Charles H. Lester, Robert T. Sloan, Lincoln G. Taylor, Charles F. Wainwright and Isadore J. Wolf, on the medical side; Drs. Jacob Block, George O. Coffin, Andrew L. Fulton, George Halley, Louis W. Luscher, and E. Van Quast, on the surgical side; Drs. Blencowe E. Fryer and John H. Thompson, oculists and aurists.

MONTANA.

A military hospital, with a capacity of twenty beds, is to be built at Fort Keogh, near Miles City.

The bill to create a state board of health has been favorably considered by the house in committee of the whole, the compulsory vaccination clause being stricken out.

In Helena the members of the board of pension examiners have resigned on account of the unreasonable and unnecessary work required and the unreasonably small fees allowed.

The osteopathy bill has been passed with amendments by the senate, the amendment making it a misdemeanor to prescribe medicine while practicing under the osteopathy law, by a person not a regularly licensed physician.

NEBRASKA.

A state health inspector, with a salary of $1800 a year, is created by a bill which provides for the organization of county boards of health, to prevent the spread of contagious diseases. The bill leaves the compensation of the county inspector to the liberality of the county board.

An ultimatum has been promulgated by Health Commissioner Dr. Victor H. Coffman, Omaha, in which he calls the attention of physicians to the fact that it is the duty of the health department to take cognizance of all sudden deaths, accidents and emergency cases. The police and health departments are to be notified, and physicians who fail to give notice to the health commissioner are subject to fine.

Medical Staff.—The medical staff of the County Hospital, Omaha, is as follows: Drs. Andrew W. Riley, Salon R. Towne, Willson R. Bridges and William F. Milroy, medicine; Drs. John E. Summers, Jr., Charles C. Allison, H. P. Hamilton, August F. Jonas and John C. Anderson, surgery; Dr. Charles Rosewater, obstetrics; Dr. H. Clayton Sumney, dermatology; Drs. Harold Gifford, Henry L. Burrell and Henry B. Lemere, ophthalmology and otology, and Drs. Ewing Brown, Fred Rustin, gynecology.

NEW JERSEY.

Dr. Daniel M. Dill, Newark, has been appointed superintendent of Essex County Hospital for the Insane.

Dr. Francis W. Bennett has been appointed surgeon and physician to the Pennsylvania Railroad Company, at Atlantic City.

Mob law ruled in Orange, March 11, when the isolation hospital which is being erected by the board of health, was demolished.

Dr. Chauncey V. Everitt, Jersey City, has been appointed city physician in succession to his father, Dr. John R. Everitt, who resigned.

Medical Library at Orange.—By the generosity of the widow of the late Dr. William Pierson, the physicians of the Oranges have become possessed of a library of 8000 volumes. For the present the books will be placed in the building in course of erection to the memory of Dr. Joseph William Stickler, whose estate contributed another library of value along other lines. The local physicians have named a committee of organization, to report, at an early date, on a plan embracing lecture halls as well as accommodations for readers.

NEW YORK.

Dr. Joshua J. Sweet has been appointed health officer of Unadilla.

Dr. Charles D. McCarthy has been appointed health officer of Geneva, for a term of three years, at an annual salary of $300.

Utica has appointed fifteen ward physicians who, with two exceptions, receive a salary of $100 per annum, the two receiving $125 each per annum.

The January deaths in the state numbered 12,524, or 2000 above the average, the deaths from acute respiratory diseases being 2720. There were 2570 deaths at and above the age of 70 years—as many as under 5 years.

Influenza in New York.—The State Board of Health has issued a statement relative to the prevalence of la grippe in this state, since its appearance in 1889. The number of deaths each year, from the disease, is as follows: 1890, 5000; 1891, 8000; 1892, 8000; 1893, 6000; 1894, 3000; 1895, 5000; 1896, 2750; 1897, 3000; 1898, 2500; 1899, 7000; 1900, 11,500. The affection has varied greatly in severity in different years; it seems likewise to have varied in virulence in different localities and to have shown various types, likewise in the rapidity of its spread. It is evidently communicable from the individual directly, possibly immediately, and conveyed in infected clothing. Like all zymotic diseases susceptibility to it varies; unlike some, immunity does not follow a previous attack. The state is now in the course of the twelfth recurrence of the disease, affecting the mortality of December by about 300; it increased the number of deaths in January by probably 3000, and was still progressing during February.

German Hospital.—This Buffalo institution was opened to the public on March 10. The building reflects great credit on the German citizens who have worked so unremittingly in behalf of the institution. The hospital will be non-racial and nonsectarian. The following staff is announced: Internal medicine, Drs. Conrad Diehl, Emil S. Tobie and Thomas Lathrop consulting, and Drs. Henry C. Bushwell, William C. L. Meisburger, Julius Ullman and Robert Hebenstreit, attending; surgery, Dr. Roswell Park, consulting, Drs. Marcello Hartwig, Herman Mynter, John G. Meidenbauer and Henry G. Bentz, attending; gynecology, Dr. Matthew D. Mann, consulting, Drs. Charles H. W. Auel, Max C. Breuer, Herman E. Hayd and Sigmund Goldberg, attending; obstetrics, Dr. Charles H. W. Auel, consulting; diseases of children, Drs. Ludwig Schroeter, Charles Weil and Herriott C. Rooth; eye and ear, Drs. Lucian Howe and Julius Pohlmann, consulting; Dr. Jacob Goldberg, attending; nose and throat, Drs. George F. Cott and W. Scott Renner, attending; skin, Dr. Ernest Wende, consulting, Drs. Grover W. Wende, Jacob M. Kraus and Alfred E. Diehl, attending; genito-urinary, Drs. Alois Joki and Julius Reister; *nervous*, Drs. William C. Krauss, Floyd S. Cregs and Herman G. Matzinger; pathology, Drs. William G. Bissell, Harvey R. Gaylord and J. A. Miller.

New York City.

The Academy of Medicine is to receive the medical library of the late Dr. Abbott Hodgman, by his will.

A fire at the Eastern District Hospital, Brooklyn, March 8, caused a panic among the patients, but was put out before any injury was done to the inmates.

A practitioner in Brooklyn has been found guilty of filing a false death certificate, in the case of a patient who died from smallpox, and has been fined $100.

The Eye and Ear Hospital has opened its new pavilion for the treatment of communicable diseases. It is the gift of Mrs. Eveline Bliss and her daughters, in memory of the late James N. Platt.

The Bureau of Contagious Diseases reports that smallpox increased in the city during February, 139 cases having been reported. Since November 5, 311 cases have been reported, with 42 deaths.

Library Books and Communicable Diseases.—A resolution has been passed by the Bureau of Health providing that no books shall be loaned from the public libraries to persons affected with contagious diseases. It will be the duty of the assistant medical inspector of the bureau to furnish a list of such patients, and a list will be sent daily to the different public libraries.

OHIO.

Dr. B. B. Taylor, who has been on duty at Columbus Barracks for the past year, has been made captain and assistant surgeon of volunteers.

In Cincinnati, two men have been arrested on the charge of using the prefix "Dr." without having complied with the law requiring registration.

Dr. R. D. Sikes, Newark, has been promoted to medical examiner for the Baltimore and Ohio Railroad Company, and has been *transferred* to Allegheny, Pa.

The Huron Street Hospital, Cleveland, is to be freed from debt. *John D. Rockefeller has promised to pay $5000, if the* balance, $10,000, is secured by October 1. The trustees have already raised $3000 of this amount.

PENNSYLVANIA.

Smallpox is still epidemic at Scenery Hill, whose population is composed mostly of negroes. Up to March 7 21 cases had been reported. A rigid quarantine is being maintained.

Dr. R. L. Taylor, medical inspector of Pittsburg, states that during the year forty-five cases of smallpox were treated at the Municipal Hospital. In his opinion the disease came from twenty different sources. The municipal hospital, it is believed, is inadequate to the needs of the city.

School Directors May Quarantine.—Representative Hamilton, of Jefferson county, has introduced a bill providing that directors of schools in townships, in addition to the powers vested in them, shall also be given the power to prohibit, from attending school, any child or person who resides in a building in which epidemic disease exists. The following are specified: Smallpox, varioloid, scarlet fever, typhoid fever, yellow fever, relapsing fever, diphtheria, etc.

Philadelphia.

Dr. H. C. Wood is in the South, on account of his health.

Jefferson Medical College has asked *an appropriation*, from the legislature, of $300,000 for the establishment of a new hospital, and other improvements.

The deaths from tuberculosis, during the past year, were 2717; from pneumonia, 2915. The mortality from diphtheria was lower than for previous years.

Surgeon H. W. Austin, in command of the national quarantine in the Delaware River and Bay, has been given orders to provide for night inspections of vessels.

Dr. A. H. Cleveland has been elected laryngologist and rhinologist to the Presbyterian Hospital, a department which has only been recently established by the board of trustees.

The University Medical Magazine, with the March number, becomes the *Medical Bulletin of the University of Pennsylvania*. It will hereafter contain no advertising matter and will be somewhat changed in form, the policy of the publication, however, not being altered.

TENNESSEE.

The Greenville Board of Health has raised the quarantine against all smallpox-infected points.

The new building for the Memphis Hospital and Medical College will be started early in April, and is to be ready for occupancy in November.

The Central Hospital for the Insane, Murfreesboro Pike. Nashville, is much overcrowded, and the management has asked for an appropriation of $20,000 for a new building.

Meharry Medical College, Nashville, graduated a class of 40, at its twenty-fifth commencement, February 27. Bishop Walden, of Cincinnati, delivered the address to the graduating class.

TEXAS.

Dr. James A. Sadler, one of the oldest physicians in Sherman, is in a critical condition from cerebral hemorrhage.

Dr. S. E. Hudson, Austin, has severed his connection with the *Texas Medical Journal*. Dr. F. E. Daniel assuming control.

The following appointments to the Medical Examining Board are announced: Dr. Samuel F. King, Sherman; Dr. Stephen A. D. Moore, Van Alstyne, and Dr. Winston B. Markham, Denison.

VERMONT.

Dr. Donly C. Hawley, Burlington, secretary of the State Medical Society for the past fifteen years, and president of the Board of United States Examining Surgeons, for pensions, has been elected mayor of Burlington on the republican ticket.

At the annual meeting of the directors of the Fanny Allen Hospital, Burlington (Winoaski Park), the following staff was elected for the present year: attending surgeons, Drs. W. G. E. Flanders, D. C. Hawley, P. E. McSweeney and O. W. Peck; attending physicians, Drs. A. T. Arkley, Lyman Allen, A. J. St Germain and J. W. Sheehan; consulting surgeons, Drs. L. M. Bingham, Wm. B. Lund, W. R. Prime and J. D. Hanrahan; consulting physicians, Drs. A. P. Grinnell, C. M. Ferrin, W. J. Labelle, H. Pepin and E. A. Burdick; specialist in diseases of eye, ear and throat, Dr. H. E. Lewis; consultant, Dr. Chietien Zaugg; pathologist, Dr. J. H. Linsley.

WISCONSIN.

Dr. Ernest L. Bullard, Waukesha, has been appointed superintendent of the State Hospital for the Insane at Mendota, vice Dr. W. A. Lyman, resigned.

Major John R. McDill, Milwaukee, who went to the Philippines as surgeon of the Thirtieth Volunteer Infantry, and who made so exceptional a record there as to be recommended for promotion by General McArthur, has decided not to return with his regiment, but will remain in Manila and assume control of a private hospital, the first of its kind to be established there.

GENERAL.

Army Dentists.—Dr. John S. Marshall, Chicago, president of the examining board of dental surgeons, U. S. Army, announces that candidates for appointment as dental surgeons in the army will be examined in the following named branches: anatomy, physiology, histology, physics, chemistry, metallurgy, dental anatomy and physiology, dental materia medica and therapeutics, dental pathology and bacteriology, orthodontia, oral surgery, theoretical operative dentistry, theoretical prosthetic dentistry, practical and operative, and practical prosthetic dentistry. An average of 75 per cent. will be required in each subject for theoretical examination, and 85 per cent. in the practical examinations.

Appropriations.—Congress, at its last session, appropriated $35,000 for the erection of the necessary buildings and quarters for a laboratory for the investigation of infectious and contagious diseases, and matters pertaining to the public health, under the direction of the surgeon-general of the U. S. Marine-Hospital Service; and authorized the secretary of the navy to transfer to the secretary of the treasury five acres of the old Naval Observatory grounds, for use as a site for the laboratory. The same bill contained appropriations of $50,000 for a boarding vessel at Reedy Island, Del., and $40,000 for a boarding vessel at Port Townsend, Wash., quarantine stations, and $29,500 for improvements at Delaware breakwater, Cape Fear, Savannah, Columbia River and Reedy Island quarantine stations.

CANADA.

Carberry, Manitoba, is to have a new hospital, erected on the cottage plan.

Dauphin, Manitoba, will erect a modern hospital in the immediate future.

Winnipeg's vital statistics for February were: 110 births, 62 male and 48 female; 71 deaths, 40 male and 31 female; marriages, 39.

The Mount Royal cemetery bill has passed the legislature of the province of Quebec. It provides for the erection of a crematory on the cemetery premises in Montreal, the first of its kind in the Dominion of Canada.

Dr. Wilfrid T. Grenfell, superintendent of the National Mission to Deep-Sea Fishermen, at present in Montreal, established the third hospital in Labrador last summer, and it has accomplished much good in relieving the sufferings of the fisher people.

Winnipeg General Hospital.—The number of patients treated at this institution during the past twelve months was 2649. In the out-door department there were 1435 consultations. Of the indoor patients, 1684 came from Winnipeg, 785 from other places in the province, 150 from the other provinces, and 30 from the United States.

Vaccination Crusade.—Dr. Laberge, Montreal's city health officer, has started a vaccination crusade in order to protect the city from the introduction of smallpox from surrunding centers of infection. He states that the health officials are meeting with less opposition to vaccination in Montreal every year. The old smallpox pavilion contains only four beds, which shows the facilities Montreal has for coping with the disease.

St. John Hospital.—The annual work done at the public hospital, St. John, N. B., last year, shows that 1038 patients were treated, 446 being medical, 486 surgical and 106 eye and ear. The amount expended on hospital maintenance was $28,291.59. The out-door department treated 1102 cases, medical and surgical, and of these 1029 received prescriptions. There were also 412 eye and ear cases, of which 398 received prescriptions.

Neglects Smallpox.—Montreal's civic council is scarcely up to modern hygienic requirements. Recently the secretary of the provincial board of health notified the council that six cases of smallpox were in the outskirts of the city, and suggested that immediate steps be taken to have a temporary isolation hospital improvised. The council showed its appreciation of the urgency of the matter by ordering the communication to lie on the table for a week.

Health Legislation.—The government bill respecting public health has passed its third reading in the Quebec legislature. By it the secretary of the provincial board of health will receive a salary of not more than $2400 per annum; and the board of health may further provide for the appointment of analysts, a statistician and the other necessary officers. There are provisions, too, to the effect that unvaccinated children may be prevented from attending the schools of the province.

Ontario Vital Statistics.—Complete returns have been received regarding births, marriages and deaths occurring in Ontario during 1900. There is an all-round increase, but the most encouraging report is that referring to births, which shows that the birth-rate of the province has increased substantially during the year. This may be accounted for by the fact that there have been a good many prosecutions before magistrates' courts for failure to register births under the provisions of the registration act. The following shows the births, marriages and deaths for the past three years, 1898, 1899 and 1900 respectively: births, 46,599, 44,705, and 46,019, being an increase of 1314 over the previous year; marriages, 15,375, 16,514 and 17,123, an increase of 609; deaths, 26,370, 28,607, and 29,594, an increase of 987. Dr. Bryce, secretary of the Ontario Board of Health, estimates the birth-rate last year at 19.19 per thousand, as compared with 19.4 in 1899 and 20.4 in 1898.

Lodge Practice in British Columbia.—On two or three former occasions notice has been taken in the columns of The Journal with regard to the action of the Victoria Medical Society in refusing to accept lodge practice from the fraternals of that city. The very latest phase of the situation looks as though the medical men were going back on their former laudable resolutions. During the past summer, the special committee on the matter, appointed by the fraternals, has not been by any means idle. Petitions were circulated throughout British Columbia, praying that the medical act of the province be amended to permit of the entrance of the practitioners of the other provinces of the Dominion or practitioners duly qualified from the British Isles, without taking the prescribed examinations of the medical council of the province. So numerous have been these petitions, and so fully have they been signed, that the medical practitioners of Victoria are on the eve of returning to the fraternal fold, and thus renouncing their former worthy and honorable action. Surely the legislature of the province, before whom the petitions now lie, will not permit of such rank coercion.

From the Yukon.—Dawson, as reported in the columns of The Journal recently, is still overrun with mad dogs. The epidemic has assumed alarming proportions and has been so serious as to compel a conference between the police, medical men and leading citizens regarding the best method of dealing with the conditions present. Many persons have been bitten, and the present condition of affairs is a menace to public health and safety. The consensus of the medical opinion is that the disease is undoubtedly rabies, of the type called "dumb rabies." The matter is a serious one from another point of view, a first-class "husky" or "malamite," trained to the sled, being worth from $300 up. Those individuals who have been bitten had their wounds immediately cauterized; but a sense of insecurity and uneasiness prevails among the citizens, as the medical men state that the disease may develop at any time within eighteen months. The citizens are allowed to shoot a dog on sight, when it shows the least evidence of madness; and it is feared that the continuation of the epidemic may cause the extinction of the entire dog species in the Yukon territory. A supply of the Pasteur serum has been ordered.

Consumption Sanatorium for Nova Scotia.—In the legislative assembly of Nova Scotia, last week. Premier Murray laid on the table the report of the special committee appointed by the government to make recommendations in regard to the establishment of a sanatorium for the treatment of the consumptives of the province. The report recommends a single sanatorium, and that the location be either Dutch Village, near Halifax, or on the shore of the Bedford Basin, at or near the village of Bedford. The congregate plan should be adopted for a small number of patients—accommodaton being provided for twenty patients, arranged on the plan of the sanatorium of Dr. Phillips, at Craigleith Hospital, Edinburgh, with a competent and special trained nurse and no medical resident superintendent, but two regular medical men to be appointed to make specified visits every week. The committee expressed the opinion that the treatment of consumptives should be carried on near large centers of population; and that the sanatorium act of the province, enacted at the last session of the legislature, be amended so that it would provide for municipalities receiving government aid for sanatoria, the same as provided for in the Ontario act. Dr. A. P. Reid, secretary of the provincial board of health, endorses the recommendations, but thinks it would be better to have a regular resident medical superintendent. He disapproves also of the Atlantic seabord as not being a suitable site for the purposes of a sanatorium.

FOREIGN.

Among deaths noted abroad are those of Dr. Bawater J. Vernon, F.R.C.S. Eng., January 28. He was a well-known London surgeon of St. Bartholomew's Hospital.

Professor Ostroumoff, of Moscow, retires this year from his connection with the medical faculty, after forty years of service. The students have founded a scholarship in his honor.

The pamphlet, signed by twenty professors, portraying the dangers of venereal diseases, and which is now given to each student at the German universities, has been reprinted by the Bavarian military authorities and distributed among the troops.

Unna's prize for the best work on the histology of primary cutaneous carcinoma was not awarded last year. The amount of the prize is now increased to 600 marks, and the same subject is still open to competition. Articles should be sent to the publisher of his *Monatsschrift*, L. Voss, Hohe Bleichen 34, Hamburg.

Prizes Offered by Belgian Academy.—The Académie Royale de Médecine de Belgique offers a number of prizes open to foreigners. Among them are the following: 800 francs for the best work with new research to determine the relations between the neurons—closed, Jan. 20, 1903; Alvarenga prize of 800 francs for the best work in any branch of medicine, received before January, 1902; anonymous prize of 8000 francs for the best work on pathogenesis and treatment of diseases of the nerve-centers, especially epilepsy—this prize can be divided; 30,000 francs will be added to this prize in case a cure for epilepsy is discovered, or some similar progress is reported.

New Mexican Publication.—The *La Cirurgia Contemporanea* is a new periodical from the City of Mexico. It is the organ of the Mexican Surgical Society, and will be published monthly. It will cover the field of general surgery, gynecology, otology, laryngology, ophthalmology and genito-urinary diseases, and is under the editorial direction of Ramon Macias. The first issue, with its introductory, makes a very favorable impression and contains articles on spinal analgesia, hysterectomy and colostomy, the latter two with illustrations. The editors appear to have broad and liberal ideas as regards the field of medicine which they represent, and the new publication starts out under the most favorable auspices and is likely to be a creditable exponent of Mexican surgery.

Progress of the Plague.—According to cable reports, 15 new cases of bubonic plague were reported in Cape Town, S. A., on March 11, and 97 persons were isolated on account of having been exposed. On the same date two colored persons died in the street, and one European on being removed to the hospital. The affection is extending to the more prosperous classes and the removal of several thousand Kaffirs from the city is being consummated, the government having decided to remove the people from one-third of the city's area and cleanse it. One soldier employed at the castle has been attacked. Since the outbreak there have therefore been 110 cases and 25 deaths. According to the *British Medical Journal* of March 2, 400 died of plague in the City of Bombay on February 24 and 25.

Medical Appointments to the King.—According to *The Lancet*, the king has appointed Lord Lister to be sergeant-surgeon-in-ordinary; Sir William MacCormac, Bart., K.C.V.O., F.R.C.S., and Sir Thomas Smith, Bart., F.R.C.S., to be honorary sergeant-surgeons. Other appointments are—to be honorary physician to the king: Dugald McEwan, M.D.; Sir James J. L. Dennet, K.C.B., M.D., inspector-general of hospitals and fleets; Sir John Watt Reid, K.C.B., M.D., LL.D., director-general of the medical department of the navy (retired); Adam B. Messer, M.D., inspector-general of hospitals and fleets; Henry C. Woods, C.V.O., M.D., inspector-general of hospitals and fleets (extra). To be honorary surgeons to the king: Sir James Jenkins, K.C.B., M.D., inspector-general of hospitals and fleets; Timotheus J. Haran, inspector-general of hospitals and fleets; Sir James N. Dick, K.C.B., director-general of the medical department of the navy (retired); William H. Lloyd, M.D., inspector-general of hospitals and fleets; Alfred G. Delmege, M.V.O., M.D., deputy inspector-general of hospitals and fleets (extra).

LONDON.

Hunterian Oration: Evolution of the Human Skull—Man and Ape.

The Hunterian Oration at the Royal College of Surgeons is usually devoted to a somewhat general description of John Hunter's life and work, and the influence of his example and principles on the growth of surgery. The orator of this year, Mr. Macnamara, the ophthalmic surgeon, instead, selected for his discourse a single biological theme. John Hunter laid the foundataion of the superb museum which, after his death, was purchased by the nation and committed to the care of the college, and which has since been enriched by many benefactions. From its treasures, Mr. Macnamara selected the "unrivalled collection of skulls," and endeavored to show the manner in which this collection throws light upon the sources from which the populations of Europe have been derived. He stated that the numerous characters common to man and the larger apes prove that they had descended from the same stock. The inability of apes to speak he explained by the fact that the anterior portion of their skulls underwent early ossification and this prevented the growth and development of speech centers. In man, on the other hand, this ossification does not take place until the age of 20, and development is possible. In prehistoric times the skull has not this power. The skull found in the tertiary formation in Java is clearly on the boundary line between men and apes, and the human skulls of the pre-glacial and inter-glacial periods more closely resemble those of the chimpanzee than of existing Europeans. With these skulls of low development are found the simplest and roughest implements. After the glacial period the skulls, though of a low type, are still better developed. Europe was then peopled by the Africo-Europeans or Iberians, a short, powerful, long-skulled race.

Mr. Macnamara attributes the better development of the Iberians to the alteration in the climate and fauna of Europe, which compelled them, in the struggle for existence, to make better use of their brains. They were followed by a race of tall people, with large, well-formed skulls, who possessed domestic animals, and used a language which still survives. After them came a tall, broad-skulled Turanian people, then a short, small-boned, broad-skulled Mongolian race. Notwithstanding many changes on the European continent, the distinctive characters of some of these races remain. In the countries which border the Mediterranean, the people are still short, dark and long-skulled (Iberians. North Germany and Scandinavia contain a large proportion of the tall, fair, long-skulled Teutonic race (Aryan), while a vast triangle, with its apex in central France and its base in eastern Russia, is inhabited by the descendants of the broad-skulled Turanian and Mongolian races.

Extraordinary Fraud—A Man Obtains His Own Death Certificate.

A man aged 35, described as a Dublin medical student, came to lodge in London and called on a doctor, minutely describing to him the symptoms of Bright's disease. He also brought urine for analysis, and it contained a large quantity of albumin. One day, when the doctor called, he appeared to be very drowsy and dangerously ill. Early on the following morning a man resembling the patient called on the doctor, but he was clean shaven and in good health, while the patient had a heavy moustache. The visitor posed as the brother of the patient, who, he said, had passed away in great suffering during the night. He was given a certificate of death. In pursuance of his usual practice the doctor visited the chamber of death. In the dimly-lighted room what appeared to be a human body was perceptable on the bed, but on examination the "corpse" proved to be a dummy composed of pillows, blankets, boots and a poker. The man who obtained the certificate, on being questioned, said: "I am the dead body," and asserted that he had committed the deception to deceive his people into the belief that he was dead. A search in his box, however, showed that he had a life policy of $1000. For having made a false declaration for the purposes of death registration, he has been sentenced to nine months' imprisonment. It appears that the man was really ill and had a high temperature, but simulated the special symptoms of Bright's disease.

Eclipse Blindness with Thrombosis of the Retinal Artery —Hemorrhage into the Vitreous.

At the Ophthalmological Society, Dr. R. D. Batten has reported the case of a woman aged 28, who watched the eclipse on May 28, 1900, without other protection than "screwing up the eyes" and looking between her fingers held close together. Objects immediately appeared black, anl, next morning, she could see only "portions of things." On June 6, when she was first seen, she had lost the lower half of the field of vision in the left eye, V = 6/18. Above the disc was a white patch, possibly an absorbing hemorrhage, and the hazy edematous retina obscured the view of the disc and retinal vessels. The edema increased until June 20, and then rapidly cleared, leaving a patch of choroidoretinitis above the disc. One of the upper-retinal arteries was occluded and the others were reduced in size. The vitreous opacities cleared and the macula was unaffected. V. improved in the injured eye to 6/12. In the right it was 6/6.

Mr. Lawford said that he had observed three cases of eclipse blindness, but without ophthalmoscopic signs. In all, however, the scotomata had persisted with deterioation of vision. Mr. Jessop had jublished three cases. In all, vision improved, but there was a slight permanent scotoma. Mr. Bokenham gave details of two cases, in one of which there were retinal hemorrhages. V. improved from 5/60 to 6/12, but there was a marked central scotoma. Dr. G. A. Berry thinks the scotoma is usually permanent in the worst cases. The public is not aware that blue glasses are worse than useless in looking at the sun and bright lights. It is the blue and violet rays which do damage. In Russia, red or yellow glasses are employed.

Correspondence.

Port Limon and Yellow Fever Reports.

Treasury Department, Office of the Supervising Surgeon-General, Marine-Hospital Service, Washington, D. C.,
March 8, 1901.

To the Editor:—In The Journal of March 2, under "Correspondence," is a letter from Dr. Edmond Souchon, president of the Louisiana State Board of Health, which takes exception to some of the suggestions contained in a paper by Dr. Nicholas Senn, published in The Journal of January 19. Dr. Souchon quotes Dr. Senn's suggestion of placing the port of New Orleans under the jurisdiction of the U. S. Marine-Hospital Service, etc., and makes the following statement: "This expression is most unfortunate, especially as coming so soon after the signal failure of the Marine-Hospital Service to recognize the existence of yellow fever in time at Port Limon last year. That service admitted the existence of the fever there several weeks only after the distinguished representative of the Louisiana State Board of Health, Dr. Will H. Woods, had advised the board of the presence of the fever at Limon, and after cases had occurred on fruit vessels plying between that port, New Orleans and Mobile. Mobile was guided by the reports of the representative of the U. S. Marine-Hospital Service and escaped infection only by enforcing the most rigid measures. Although Mobile had not actually recognized Limon as infected, she treated vessels from there as if the port was infected. Finally she did proclaim Limon infected."

In refuting Dr. Souchon's statements, I think it necessary to first disavow any inspiration either from myself or, so far as I know, from any officer of the Service, prompting Dr. Senn in his expression of opinion, but I can not allow Dr. Souchon's statements to go unquestioned.

So far from the signal failure of the U. S. Marine-Hospital Service to recognize the yellow fever in time at Port Limon last year and only admitting its existence there several weeks after Dr. Woods had advised the Louisiana State Board of Health of its presence, I have to state that the advice of Dr. Woods, as referred to, was about the middle of July, whereas by reference to the *Public Health Reports* of May 4, 1900, page 1072, it will be seen that Acting Assistant Surgeon Thomas, of the Marine-Hospital Service, cabled from Port Limon as early as April 20 the existence of one fatal case of yellow fever in that port. Moreover, as early as April 20—see *Public Health Reports* of that date—a report from Acting Assistant Surgeon Hodgson, specially detailed to obtain information concerning Central American ports, was published bearing date of April 7, in which he states as follows: "Port Limon, Costa Rica, is the cleanest town south of the Rio Grande on the seacoast, but I consider it the most dangerous. I think that yellow fever is endemic in the port." etc.

Dr. Souchon's letter would leave the impression that no notice of the condition of this port was given until his own officer advised the Board of the fever at Limon in July, and it is to relieve this impression that I quote the above publications. Now, so far as the report of Dr. Woods referred to is concerned, the Service never has and does not yet admit its correctness, but to be entirely on the safe side the bureau published a cable from Acting Assistant Surgeon Thomas, dated July 17 and published in the *Public Health Reports* of July 27, as follows: "Woods reports to State Board Health, New Orleans, La., 1 case yellow fever, 1 suspicious. Drs. Carson, Steggall, Aguilar and myself disagree with Woods," and in *Public Health Reports* of August 3, under date of July 19, Dr. Thomas explains at length his reasons for disagreeing.

It is understood that Dr. Woods, after reporting this case as yellow fever, reported to his board four other cases as yellow fever, all of which were seen by three of the consultants in the first case, by whom they were not even regarded as suspicious. No official reports of these as yellow fever cases have ever been received at this Bureau, but the charts and the statement from Acting Assistant Surgeon Thomas showing them to be malaria are on file.

August 18 and 22, cases of yellow fever which occurred on vessels were reported by Acting Assistant Surgeon Thomas. (See *Public Health Reports*, August 31, p. 2164, and September 7, p. 2276). On October 31 another case occurred on a vessel and was duly reported by Acting Assistant Surgeon Thomas over the cable. (See *Public Health Reports*, Nov. 30, 1900, p. 2929). On October 31 there was one case of yellow fever reported in Port Limon, which was duly cabled.

It is true that Mobile was guided by the reports of the Marine-Hospital Service, but as to enforcing most rigid measures they were no more than are ordinarily enforced under like circumstances.

I deem the above statements necessary simply to show the watchfulness and care of the Marine-Hospital Service at Port Limon last season.

To summarize, in April, a representative of the Service made a full report on the sanitary conditions of Port Limon. On April 20 a case of yellow fever was reported by the acting assistant surgeon stationed there. July 17 a suspicious case, with the full facts, was reported by the acting assistant surgeon, who, however, denied, together with three other prominent physicians, the diagnosis of Dr. Woods, who stood alone in his belief. The remaining cases of yellow fever that occurred at Port Limon, four in number, were duly reported as soon as they occurred.

All the above facts were published. Respectfully,

Walter Wyman, M.D.
Surgeon General, M.-H. S.

Committee on National Legislation and Annual Conference, Washington, D.C.

To the Editor:—By an amendment to the quarantine laws, the last Congress authorized the Surgeon-General of the U. S. Marine-Hospital Service, with the approval of the U. S. Secretary of the Treasury, to designate and mark out the boundaries of the quarantine grounds and anchorages for vessels at the United States quarantine stations, and imposed a penalty of fine or imprisonment or both for the violation of any part of the act or any regulation made in accordance with the act.

Another section of the amendment provided for quarantine measures to apply to vessels arriving in collection districts without entering a port of the United States. This is intended particularly for fishing-smacks and other small craft which leave Cuban ports for smuggling rum and tobacco into the United States along the coast of Florida; these vessels were liable to convey infection by landing their sick on this coast.

To further aid in the enforcement of the quarantine laws the act gave authority to national quarantine officers to administer oaths.

The above law was recommended by the Committee on National Legislation of the American Medical Association, and approved, at their annual conference, held at Washington, D.C., Feb. 20 and 21, 1901, of the legislative delegates from the various states of the United States. Concerted action in the future will, it is hoped, secure more legislation indorsed or proposed by the national conference with the legislative committees of the American Medical Association.

H. L. E. Johnson, M.D.

Chairman Committee on National Legislation, American Medical Association.

Quarantine Against Plague.

New York, March 8, 1901.

To the Editor:—Dr. Doty is quoted by Dr. Bracken, in The Journal of March 9, p. 677, as having said that "rats collected at New York, from coffee-carrying vessels from Rio Janeiro and Santos, during the recent outbreak of plague in those two places, were examined bacteriologically, and in no instance was there the slightest evidence of bubonic plague." I add that neither did Dr. Doty's bacteriological examination disclose bubonic plague in the body of the dead laborer on one of the lighters to which the cargo was being removed in mid-bay—who suddenly died of pneumonia. Yet the man's hands had been in direct contact with the rat-infected cargo, and had breathed into his lungs its dust. Credit is due President Murphy, of the New York Board of Health, for his firmness in not permitting the port quarantine service to unload those ships at their piers. Had that been done, some sick rats could have come ashore to infect our sewers by their droppings, or by transferring their infected fleas to our rats. And this plague pneumonia, if the bubonic stage was delayed, might have gained its foothold here. The Bombay Medical Union claimed that in some such way their city became infected from sugar cargoes from Hongkong, which were unloaded at the granary-piers, the feeding places of the Bombay rat.

Dr. Doty's position, at the time of our controversy, was wholly on the side of the coffee importers and the New York Chamber of Commerce. Albert S. Ashmead, M.D.

Washington's Governor and Medical Practice.

Spokane, Wash., March 4, 1901.

To the Editor:—I noted with great pleasure your very just criticisms on the conduct of Governor Thomas of Colorado, in a recent issue of The Journal, also the manner in which the profession has turned him down. I take pleasure in informing you that our state legislature has similarly rebuked John R. Rogers, the present governor of the State of Washington.

At the beginning of the present session of our legislature one of the representatives from this county, Dr. C. G. Brown, introduced a bill which was a slight improvement over our former medical act, in that it prevented osteopaths and other quacks from practicing without having been properly licensed. It also made possible conviction of parties practicing medicine without the necessity of proving that they actually received money for the services. In addition to this, it has a provision for recognizing the licensed graduates from other states, having regular licensing bodies. This bill, after passing both houses, was vetoed by the governor in a long harangue on the blessings of osteopathy, which was published in all the papers in the state. The bill was immediately reconsidered, through the efforts of Dr. Brown, and has now passed both houses with a safe majority, and is a law. Yours very respectfully,

C. P. Thomas, M.D.

[The Journal of March 9 editorially commented on this action of Washington's governor, the news of the above reprimand to his veto having been received after that issue of The Journal was on the press. Ed.]

Subscriptions for Ollier Monument.

To the Editor:—The undersigned constitute a committee similar to those formed in several European countries for the purpose of receiving subscriptions for a monument commemorative of the distinguished scientific services of Prof. Leopold Ollier. Among the members of these committees are Lord Lister, Professors von Bergmann, Czerny, Durante and other leading men. The municipality of the city of Lyons has dedicated an open space adjacent to quarters of the various academic faculties on the border of the Rhone, named in his honor "Place Leopold Ollier."

The profession of this country is well aware of the great services rendered by Professor Ollier, especially in the domain of plastic and osseous surgery. His labors have been most fruitful in the domains of surgery, of physiology and pathology.

The committee hopes to raise not less than $1000 as a testimonial from the profession of America. Check should be forwarded to Dr. W. W. Keen, 1729 Chestnut street, Philadelphia, at as early a date as possible.

Committee:—Robert Abbe and William T. Bull, New York; P. S. Conner, Cincinnati, Ohio; A. T. Cabot, Boston; Howard A. Kelly, Baltimore; W. W. Keen, Philadelphia, Rudolph Matas, New Orleans; Wm. J. Mayo, Rochester, Minn.; W. F. McNutt, San Francisco; Roswell Park, Buffalo, N. Y.; Clayton Parkhill, Denver, Colo.; Maurice H. Richardson, Boston; Nicholas Senn, Chicago.

Married.

George A. Broughton, M.D., Oxnard, Cal., to Miss Mary Livingston, of San Francisco, Cal.

William A. Caven, M.D., Hazelwood, Pittsburg, Pa., to Miss Margaret Elizabeth Wirchack, of Monessen, Pa., February 28.

George W. McCoy, M.D., U. S. M.-H. Service, formerly of Bristol, now stationed in San Francisco, Cal., to Miss Edith Miller, of Pennsylvania, at San Francisco.

Deaths and Obituaries.

Richard J. Dunglison, M.D.

Dr. Richard James Dunglison died at his home in Philadelphia, March 5, from dropsy and heart failure, following an attack of pneumonia a year ago. He was born in Baltimore, Nov. 13, 1834, and came of a medical family, his father being Dr. Robley Dunglison, professor of institutes of medicine and medical jurisprudence in Jefferson Medical College, and his grandfather, Mr. John Leadam, a noted surgeon of London, England. He was graduated from Jefferson Medical College in 1856, but after a few years relinquished the practice of medicine for the field of medical literature. He was editor of two editions of "Dunglison's Medical Dictionary," and of the "History of Medicine," of which his father was the author; was editor of *Dunglison's College and Clinical Record* for fifteen years, one of the original editors of the *Philadelphia Medical Times*, for several years Philadelphia correspondent of the *Medical Times and Gazette* of London, and a frequent contributor to the medical literature. He was the author of the "Practitioners' Reference Book;" "A Handbook of Diagnosis, Therapeutics and Dietetics"; "A New School of Physiology and Hygiene"; "An Elementary Physiology and Hygiene," and "The Present Treatment of Diseases." He also translated Guersant's "Surgical

Diseases of Children," from the French. From 1862 to 1865 he served as acting assistant surgeon in the United States Army, in various military hospitals in Philadelphia, for the last two years of that time being executive officer of the Filbert Street Hospital. He was a member—and for many years treasurer—of the Philadelphia County Medical Society; and of the College of Physicians of Philadelphia; a member and, in 1875, corresponding secretary of the Pennsylvania State Medical Society; of the American Academy of Medicine, of which he was secretary and treasurer for several years and vice-president in 1890. He was for many years a member of the AMERICAN MEDICAL ASSOCIATION, of which he was assistant secretary in 1876, and treasurer from 1877 to 1894. He was also assistant secretary of the International Medical Congress in 1876, and corresponding secretary of the Centennial Medical Commission in the same year. In 1877 he served as secretary of the executive committee and chairman of the finance committee of the Ninth International Medical Congress. He was also corresponding secretary of the Alumni Association of Jefferson Medical College from its inception, and for many years honorary local secretary of the New Sydenham Society of London.

John Dean Ross, M.D., University of Pennsylvania, 1832, died at his home in Williamsburg, March 5, aged 95. He founded the Blair County Medical Society in 1848, and was the first president. He was president of the State Medical Society in 1865, and at the time of his death was its oldest member. He had been a member of THE AMERICAN MEDICAL ASSOCIATION for forty-seven years.

Charles F. Knight, M.D., Medical School of the Valley of Virginia, Winchester, 1852, one of the pioneer physicians of Missouri, formerly superintendent of State Asylum No. 2 for the Insane, one of the founders and the first president of the St. Joseph, now the Ensworth Medical College, died March 4, at his residence in St. Joseph, after a lingering illness, aged 71.

J. Stone Armstrong, M.D., Jefferson Medical College, Philadelphia, 1879, a prominent physician of Buffalo, and at one time grand master workman of the A. O. U. W. of New York State, died at his home, March 4, from pneumonia, after a short illness, aged 61.

R. Wilson Carr, M.D., University of Maryland, Baltimore, 1852, a member of the Walker expedition to Nicaragua, a surgeon in the Confederate Army, and for a quarter of a century a resident of Sedalia, Mo., died at his home in that city, March 5, aged 70.

George Holmes Bixby, M.D., Harvard Medical School, for many years a gynecologist in Boston and a frequent contributor to the literature of that specialty, died at his home in Boston, February 26, after many years of invalidism, aged 63.

James Chapman, M. D., New York University, 1852, for many years a surgeon in Medina, N. Y., and in the Civil War, died from paralysis, after an illness of several years, at his home in Medina, February 27, aged 77.

Thomas H. Morrow, M.D., Northwestern Ohio Medical College, Toledo, 1889, of Erie, Mich., while driving across the tracks in Toledo, Ohio, February 27, was killed by a train.

Aloysius X. Whiteford, M.D., Washington University School of Medicine, Baltimore, 1873, died at Parkville, near Baltimore, February 28, after a lingering illness, aged 52.

Lawrence J. McDonough, M.D., University of Vermont, Burlington, 1886, died at St. John's Hospital, Lowell, Mass., after an illness of three months, March 2, aged 45.

S. A. Mercer Given, M.D., University of Pennsylvania, 1887, Clifton, Pa., died at that place, February 23, aged 41, from diabetes, after a long illness.

Fred L. Thayer, M.D., Harvard Medical School, 1871, died after a long illness, from Bright's disease, at his home in West Newton, Mass., aged 53.

Frederick Hibbard, M.D., Medical College of Ohio, Cincinnati, 1884, died suddenly at his home in Little Hocking, Ohio, February 23, aged 40.

James C. Smiley, M.D., who had practiced in Kewanee, Ill., for more than thirty-five years, died at his home in that town, March 3, aged 70.

Tillie Dittenhoefer, M.D., University of Oregon, 1896, died suddenly from heart disease, February 22, aged 40, in Portland, Ore.

Alpheus J. Clemmons, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1879, died at St. Joseph, Mo., March 8.

William G. M. Seiple, M.D., University of Pennsylvania, 1867, died at his home in Lehighton, Pa., March 1, aged 55.

William B. Young, M.D., Jefferson Medical College, Philadelphia, 1845, died at his home in Higley, Fla., February 22.

Robert Stone, M.D., College of Physicians and Surgeons, New York, 1858, died in New York City, March 7.

Book Notices.

MASTERS OF MEDICINE. THOMAS SYDENHAM by John Frank Payne, M.D., Oxon. Fellow and Harveian Librarian of the Royal College of Physicians. Cloth. Pp. 264. Price, $1.25. New York: Longmans, Green & Co. 1900.

The life of Sydenham is not "an open book," and the paucity of material referring to the man and his work makes a satisfactory biography out of the question. The author has placed before the reader all that is known of the "great physician," but no attempt is made to fill in gaps which reliable records have left. To those who had formed a high opinion of Sydenham, without inquiring why he has been placed on the pedestal he seems to occupy in British medicine, the reading of this book will be a disappointment. Not that the author has not done his work well, for he has, but the records do not appear to show that Sydenham was such a remarkable man. If asked what Thomas Sydenham had done that he should be regarded so highly, few would be able to give a satisfactory answer. He is supposed to have first described that form of chorea which still bears his name, but his biographer quotes Sturges as saying that Sydenham's original description of it was so imperfect that the disease could hardly be recognized therefrom, and the biographer confesses that "it is not a very complete picture of the disease." He introduced a liquid form of opium, a preparation similar to wine of opium of later time, called "Sydenham's laudanum," and which appeared in books, under this name, till quite recently. The biographer credits this with making its originator more widely known than did his writing. His books do not show any great amount of wisdom, nor did they have any material effect on the practice of the time.

The book, however, is not only an interesting, but is also a valuable one in that it depicts the profession as it was then. It shows that quackery was just as influential at that time as it is now; and there is some satisfaction in knowing that, in this regard at least, we are no worse off than was Sydenham and his fellows.

PARALYTIC DEFORMITIES OF THE LOWER EXTREMITIES. The Principles of their Surgical Treatment. By E. Noble Smith, F.R.C.S. Edin., L.R.C.P. Lond., etc., Senior Surgeon to the City Orthopedic Hospital, and Surgeon to All Saints' Children's Hospital, London. With 51 Illustrations. Cloth. Pp. 99. Price 5 shillings. London: Smith, Elder & Co. 1900.

This little work is a general review of the aspects of paralytic deformities of the lower extremities, with especial consideration of the question of functional treatment. While brief, the work is a valuable addition to orthopedic surgery. It is fairly well illustrated.

OBSTETRIC CLINIC. By Denslow Lewis, Ph.C., M.D., Professor of Gynecology in the Chicago Policlinic. A series of Clinical Lectures on Practical Obstetrics delivered to Students and Practitioners in Cook County Hospital, Chicago, together with Remarks on Criminal Abortion, Infanticide, Illegitimacy, the Restriction of Venereal Diseases, the Regulation of Prostitution and other Medico-Sociologic Subjects. Cloth. Pp. 640. Price $3.00. Chicago: E. H. Colegrove. 1900.

Dr. Denslow Lewis has reproduced, in book form, the clinical lectures given by him in 1887 in the Cook County Hospital, Chicago. These include the majority of the subjects included under the general head of obstetric practice, and also some sociologic papers which do not necessarily fall under the head of clinical lectures. Dr. Lewis is an able lecturer and knows how to present the cases in an interesting and edifying manner, and his lectures will be profitable reading. The student and practitioner both will find the perusal of this work instructive. We wish we could say as much in favor of the make-up of the book which is defective in several ways. The paper is of inferior quality and the changes of tints are almost trying to the eyes. It is a pity that such a meritorious volume in many respects is not better presented to the public.

Ethical Marriage. A Discussion of the Relations of Sex from the Standpoint of Social Duty. By Delos F. Wilcox, Ph.D. Cloth. Pp. 235. Price $1.25. Ann Arbor, Mich.: Wood-Allen Publishing Co. 1900.

Ethical marriage, the author says, is a protest against the idea that the matter is to be discussed by physicians alone. This is, therefore, a popular presentation, including certain subjects which are not commonly said to be suitable for general discussion. The author's treatment is commendable in some respects, and in others open to objection. We can not say that we think the book as a whole one to be recommended to the young, notwithstanding the excellent moral tone of many of its chapters. It is a curious fact that the author idealizes a writer who is not, in the opinion of many who have glanced over his works, the most moral in his tendencies, and for that reason we should have some suspicion of his judgment on these matters. The book is well written and doubtless will be found readable, but we do not think it as good a work as some others that have been issued under the same apparent auspices.

Physical Diagnosis in Obstetrics. By Edward A. Ayers, M.D., Professor of Obstetrics in the New York Polyclinic. With Illustrations. Cloth. Pp. 276. Price $2.00. New York: E. B. Treat & Co. 1901.

This work is meant to serve as a guide to physicians and undergraduates in the examination of pregnant, parturient and puerperal women. It is, indeed, an elaborated case-taking chart, emphasizing all important points to which attention should be directed in the study of clinical obstetrics. In the training of medical students, in most schools of America, less care is given to practical and bedside obstetrical teaching than to any other branch of medicine. The facilities for the imparting of thorough instruction are scanty, and teaching methods are crude and undeveloped. Dr. Ayers has done good service in showing how much can be done by a competent and conscientious teacher who desires to give his students something besides systematic didactic lectures. It is a pity that the book is not printed in better style. Most of the illustrations are badly reproduced and several qualities of paper are used. The work is in no way creditable to the publishers.

Clippings from Lay Exchanges.

RARE SURGICAL OPERATION.

New York, March 7.—"A clerk in an insurance company is in St. Luke's Hospital, recovering from a surgical operation, one of the rarest known to medical science. The operation is known as gastro-anterostomy, and consists of removing the patient's stomach, cutting away several malignant growths in the vicinity of the pyloris and restoring the stomach to its former place." The patient "complained some months ago of severe pains in his stomach and was troubled with insomnia. . . . a tube inserted. . . . showed a total disappearance of all acids and a destruction of the pepsin. . . . Examination disclosed a systematic degeneration of the pancreas. . . . The stomach was cut away from the intestines and the organ was lifted completely out of its place and laid on a cushion of antiseptic clothes placed on the patient's chest. The stomach was then put back in its accustomed place. . . . But little blood was apparent throughout the whole operation. . . . The patient rallied at once and it was seen that the operation was a success."—*Evening Post*, Chicago, March 7, 1901.

MURPHY BUTTON EXPLAINED.

"A tube was inserted in Mr. ——'s abdomen leading into the intestines. . . . This tube is closed with a Murphy button, so called from having been invented to suit the case of Colonel Michael C. Murphy, the police commissioner.—*New York Tribune*, March 8, 1901.

ONE OF FORTY.

"One of the oldest and wealthiest residents of this section (Sioux City, Iowa) submitted to a delicate operation yesterday. His malady is one of the rarest in the world, less than forty other similar cases having ever come to the notice of medical men. It is called eurthro millilagia, which causes the blood to coagulate and refuse to go back to the heart. The pressure caused by the active blood against the stagnant portion causes great pain in the parts affected. . . . The operation consisted in cutting nerves controlling veins near the instep. . . A French physician published a book in two volumes in which eurthro maliligia is exhaustively treated of and a remedy suggested. The patient sent for the books, had them translated, and has undergone the operation on the suggestion of the French specialist."—*St. Paul* (Minn.) *Dispatch*.

HOW HE SETTLED THE BILL.

"A well-known physician recently sent to the address of one of his patients a bill for professional services, and within ten days received the following letter written on the back of his memorandum: 'Dear Sur: This note was put in my box by mistake. I han't the man hee's dead and aint no relation of mine anyway. I don't see how your conshens will let you dun the dead. Why don't you live a better criston life and let live and try to meat that man who dide in heaven which is worth moar than forty dollars to enny doctor."—*Ft. Smith* (Ark.) *Elevator*, March 1, 1901.

"BONIFIED" OSTEOPATHY.

"William Hartford, a graduate under Andrew T. Still, the founder of Osteopathy, has located. . . . at Champaign, Ill. He does not pretend as having graduated from the great colleges in Europe and America, for such a thing is disgusting to an honest and meaning people, but he does claim that he is the only bonified osteopathist in Champaign county and is perfectly willing to substantiate what he says."—*Farmer City* (Ill.) *Sun*.

MEDICAL JURISPRUDENCE.

"The condition of Judge —— at the present time is more serious than at any time since the beginning of his recent sickness. . . . His son, Dr. ——, of Chicago, assisted by the local physician, is in constant attendance and everything known to the medical jurisprudence is being done to prolong his life and alleviate his suffering."—*Council Bluffs* (Iowa) *Nonpareil*, Feb. 26, 1901.

LADY ASSISTANT NEEDED.

"Dr. —— returned Monday evening. . . . He was called to Blue Earth to treat several cases of appendicitis, among them some ladies which rendered it necessary for him to take his lady assistant."—*Fond du Lac* (Wis.) *Commonwealth*.

A VALUABLE COMBINATION.

"L. L. ——, the undertaker, has just completed a course at the San Francisco College of Physicians and Surgeons, and passed his examination with 97 per cent."—*Oakland* (Cal.) *Tribune*.

GASTRIC AND STOMACH TROUBLE.

"A lady in Hedding, N. H. . . . says the after-effect of the grip was a serious gastric and stomach trouble."—*Chicago Times-Herald*, Jan. 12, 1901 (Adv.)

THE NEW SURGEON-GENERAL.

"Dr. —— left last month for San Francisco where he was appointed surgeon-general in the United States Army."—*Lawrence* (Mass.) *Telegram*.

MEDICAL SURGEON.

"Joe B.——, the medical surgeon, of Logansville, has moved to Crayon."—*Urbana* (Ohio) *News*.

APPENDICITIS.

"Dr. Swaney took another attack of Appendicitis a few days ago."—*Youngstown* (Ohio) *Telegram*.

Miscellany.

The Population of Germany.—According to the census of Dec. 1, 1900, as announced by the official organs of the empire, this is 56,345.014, of which 27,731,067 are males. Thirty-three of the largest towns aggregate 9,108,814. Since 1895 the population has run up to 7.78 per cent., the highest rate for any quinquennial period for the last thirty years.

Influence of Extract of Feces on the Blood.—Dogs and rabbits were injected subcutaneously with various extracts of fecal substances. The aqueous extract produced a marked effect on the composition of the blood, diminishing the number of red corpuscles and the amount of hemoglobin, with pronounced anemia in various organs, the animals dying of pernicious anemia. The experiments are reviewed in the *St. Petersburg. Med. Woch.*, No. 4; the results suggest an explanation of the etiology of idiopathic pernicious anemia in man.

Total Excision of Larynx.—A case of total excision of the larynx is reported in the *Medical Press and Circular* of February 16, in a man of 55, for carcinoma. The larynx was removed under complete narcosis, without previous tracheotomy. and a canula being employed only after the operation was finished. The patient wears an artificial larynx, by means of which he speaks quite intelligibly and so that he can be heard over a large room. The malignant growth occupied the whole left half of the larynx and anteriorly extended through the midline to the right hand, extending downward to the cricoid cartilage.

The Commission Evil.—The following is taken from the *Texas Med. Gaz.* for February: "We append a clipping from the *New England Medical Monthly* concerning the payment of commissions on cases referred to the surgical or other specialist by the general practitioner. There has never been a question of ethics or morality before the profession that had as little to recommend it to decent men as this so-called commission evil. The discussion of it needed only to be carried to its logical conclusion to show that, as far as his relation to the patient is concerned, there is no honorable ground left for either the man who tenders the fee or the one who accepts it. It is gratifying to see that the profession at large, whose common sense can usually be relied upon, has come to this conclusion and we will hear much less of it, in the future, than in the past. The article is written from the standpoint of 'a member of a medical society, in which the president, vice-president, secretary and various committees are all comprised in one man,' in other words, the writer himself: 'Speaking of confidence in each other brings us to another comment in our local society transactions. We view with great alarm the entrance of a commercial spirit in parts of the profession, and the birth of a son of the commercial spirit in the form of the commission evil. That would promptly destroy whatever confidence the people have in our profession as a whole, and it woud undermine the very pillars and foundation of responsible medical service. There are men in the profession whom our local society holds in reverence, and we often refer cases to them for special treatment that is better than any that we can give the patients who have put their trust in us. If one of these men were to offer us a commission for referred cases he would promptly fall from his pedestal before our very eyes, and become a statue of Achilles with his head in the mud. We are engaged in special work ourselves. We have not often been asked to give any commissions and, as a local society, we pride ourselves in the belief that certain men gave one good look at us and then did not dare to ask it. There is a homely old saying about birds of a feather having a fondness for getting close to each other, and our society believes that the commission birds will soon be distinguished as a class by that responsible element in society which knows pretty well the character of its legal, clerical and medical advisers. We believe that the giver and receiver of medical commissions will carry in their countenances the little cloud of dishonor that recognized by one's self is recognized by others.'"

Societies.

COMING MEETINGS.

Medical Society of the Missouri Valley, Omaha, Neb., March 21, 1901.

Tri-State Medical Society of Iowa, Illinois and Missouri, Keokuk, Ia., April 2-3, 1901.

Medical Association of the District of Columbia, Washington, D. C., April 2, 1901.

Tennessee State Medical Society, Nashville, April 9-11, 1901.

Florida Medical Association, Jacksonville, April 10, 1901.

Western Ophthalmological and Otolaryngological Association, Cincinnati, Ohio, April 11-12, 1901.

Medical Association of the State of Alabama, Selma, April 16, 1901.

Medical Society of the State of California, Sacramento, April 16-18, 1901.

South Carolina Medical Association, Florence, April 17, 1901.

Medical Association of Georgia, Augusta, April 17, 1901.

Louisiana State Medical Society, New Orleans, April 18-20, 1901.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 23-26, 1901.

Texas State Medical Association, Galveston, April 23, 1901.

American Association of Genito-Urinary Surgeons, Old Point Comfort, April 30, 1901.

Association of American Physicians, Washington, D. C., April 30, 1901.

Austin Flint Medical Society.—This Society recently held its tenth annual banquet at Pittsburg. About twenty members were present. Dr. Joseph Stein acted as toast-master.

International Congress of Physiology.—The fifth session of this Congress will be held at Turin, September 16 to 19, in Professor Mosso's Institute. The secretary is Dr. Treves, Corso Raffaelo, 30, Turin, Italy.

Tri-State Society of Iowa, Illinois and Missouri.—The ninth annual meeting of this Society will be held at Keokuk, Iowa, April 2 and 3. Dr. Henry Hatch, Quincy, Ill., is president, and Dr. William B. LaForce, Ottumwa, Iowa, secretary.

French Congress of Surgery.—The subjects announced for discussion at this Congress, which will meet in Paris, October 21 to 26, are "Surgery of the Spleen" and "Treatment of Tubercular Lymphadenitis," with addresses by Février and Broca.

Louisville (Ky.) Society of Medicine.—At a meeting of this Society, March 4, the following officers were elected: Dr. Richard T. Yoe, president; Dr. William A. Jenkins, vice-president; Dr. Waller O. Green, secretary, and Dr. A. Henry Falconer, treasurer.

Ingham County (Mich.) Medical Association.—The physicians of Ingham County met at Lansing for organization, March 1, and elected Dr. Frank W. Shumway, Williamstown, temporary president, and Dr. Alexander D. Hagadorn, Lansing, temporary secretary.

Tippecanoe County (Ind.) Medical Society.—The annual meeting of this Society was held in Lafayette, March 4. Dr. Milton S. Hopper was elected president; Dr. Franklin B. Thompson, vice-president; Dr. John S. Morrison, secretary, and Dr. George K. Throckmorton, treasurer—all of Lafayette.

Medical Society of the Missouri Valley.—The thirteenth semi-annual meeting of this Society will be held at the Paxton Hotel, Omaha, Neb., March 21. Dr. Vernon L. Treynor, Council Bluffs, Iowa, is president, and Dr. Chas. Wood Fassett, St. Joseph, Mo., secretary.

Madison County (Ala.) Medical Society.—At a recent meeting at Huntsville, this Society endorsed the bill restricting child labor in factories, and adopted a resolution asking the representatives in the legislature to support a bill for compulsory vaccination in the state.

French Congress of Neurology.—The neurologists and alienists of France hold their congress this year, at Limoges, in August. The subjects announced for discussion are the "Physiology of the Muscle Tonus, and Modifications of the Reflexes in Case of Lesions of the Cerebrospinal Axis"; "Acute Delirium" and "Attendants in Asylums," to be presented by Crocq, Carrier and Taguet.

Laennec Society, Baltimore.—At the last meeting of this Society, Dr. W. S. Thayer read a memoir on Laennec, and Dr. Louis Hamburger spoke on "The Physical Signs of Pulmonary Tuberculosis as Described by Laennec." He exhibited a model of the first stethoscope made by Laennec. It was twelve inches long, and a nearly solid tube with a small central canal. One end was hollowed out to contain a stopper for use in auscultating. The instrument was formed of two equal halves fitting onto each other for greater convenience in carrying. Laennec made his own stethoscopes and did not bare the chest in examinations. At the same meeting Dr. Sowers read a paper on "The Growth of Our Knowledge of Acute Miliary Tuberculosis."

Orleans Parish (La.) Medical Society.—At a meeting of this Society, recently, in New Orleans, Dr. Louis G. Le beuf reported the case of a puerpera who died on the fourteenth day from cardiac embolism, having given no previous signs other than unrest and a vague premonition of death. Dr. William Scheppegrell presented an article on "Dust as a Factor in Diseases of the Upper Respiratory Passages." As a result of the discussion on this paper it was resolved to take steps to secure the passage, by the city council, of a strict ordinance against spitting in public places. In response to an appeal from Dr. Rudolph Matas, of the American Committee on the Ollier Monument, the Society voted $25 for the fund to erect, in Lyons, a monument to this great French surgeon. A special committee was appointed to study the mosquito as a means of propagating yellow fever

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PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held February 27.

Dr. George Erety Shoemaker in the chair.

Typhoid with Unusual Temperature.

Dr. Elizabeth Peck reported two cases of typhoid fever. The first was in a woman 32 years of age, and in whom nervousness was a pronounced symptom. What was striking in this case was the excessively high temperature, which often rose to 109 F., probably due to hysteria. The temperature was taken by several thermometers, simultaneously in the mouth, axilla, and rectum. It was observed that at times the temperature in one region would be higher than the others, and would alternate. The patient made an uneventful recovery.

Registration of Tuberculosis.

Dr. Matthew Woods read a paper on the registration of tuberculosis from the standpoint of private practice. He considers the question of registration a large one, and that probably the majority of the families of this country could point to one relative who had died from the effects of this disease. To register these cases might place a ban upon them. The boy or girl applying for a position might be asked for a health certificate showing that no member of his family had been a sufferer from consumption, and if so might be turned away as being unfit. Italy has tried registration, but the rules were so rigorous that it was abandoned. One of the most beneficent policies in the treatment of these cases is to keep from the patient the knowledge that he has consumption. We may err in the diagnosis of such cases, and he has never seen benefit result from telling the patient that he has tuberculosis. Such knowledge will cause the patient to become more despondent, and too often plunge him into debauchery. He called attention to Goethe and Michael Angelo, both of whom had suffered from pulmonary hemorrhages, the former dying at the age of 88, The death certificate would apprise the health office of a death from tuberculosis and the officials could then disinfect where necessary. Before death the patient should have instructions from the physician in regard to personal hygiene.

Home Treatment of Tuberculosis.

Dr. L. W. Flick read a paper on this subject. By "home treatment" he meant treatment where the disease had been contracted. In his experience it is hardest to keep these patients up to the usual standard of nutrition. The home treatment consists of inclosed and open treatment, the former being that in institutions; the open, where more or less liberty is allowed. Good results have been achieved by the closed treatment, and this may be the method of the future. He considers that one of the greatest drawbacks in any treatment is that the disease is not recognized early enough, and frequently not until an attack of pneumonia or influenza has occurred. Persistent indigestion, with loss of flesh might suggest tuberculosis. When the disease is first recognized, he thinks one of the most important things is to tell the patient that he has consumption, and that no patient ever becomes worse for such knowledge. As to the treatment, he usually limits solid diet to one meal, and gives large quantities of milk, frequently as much as six quarts. Eggs are also valuable, and he allows from six to a dozen a day. Pastries are to be avoided. An abundance of fresh air, both day and night, is imperative. At night the windows should be left open. During the day, the patient may be wrapped up warm and remain in the sunlight, with free ventilation. He may at times be allowed to remain out of doors, or on the roof of his home. Anywhere, so long as he gets plenty of fresh pure air. Of medicines, he relies mostly on the iodin compounds, by inunction. In some cases inhalations may be of service. Arsenic, strychnin, and iron are all good.

Dr. J. C. Wilson also believes that the patient should be told that he has consumption and warned of the danger to others. Hospitals for the treatment of these cases should engage the attention of health authorities.

Dr. R. G. Curtin spoke of certain complications which might be opposed to home treatment. He believes that most patients with tuberculosis do not get enough sunlight. He referred to a case in which pronounced benefit followed an out-door life, in a change of climate, with only a simple diet. As to registration, he spoke of a case occurring at the Philadelphia Hospital, who had suffered for years with an ulcerative process affecting the lung, and had been put in the ward with cases of tuberculosis, yet he lived for years and no bacilli could be found after repeated examinations.

Dr. C. M. Cooper, Edinburgh, being invited to take part in the discussion, stated that in England certain institutions have been established for the treatment of tuberculosis. As a rule these institutions only admit those patients in the early stages of the disease. The results achieved have been good.

Dr. J. M. Anders agreed with the statements of Dr. Flick, and said that over one-half the cases of tuberculosis must be treated at home. Too little detail has been given to home treatment.

Dr. S. Solis-Cohen said that persistent hope on the part of the physician is all-important. His experience is that if the patient is told of his condition it proves beneficial.

Dr. A. V. Meigs believes that registration would not prove beneficial.

Dr. I. J. Mays expressed doubt as to the benefits to be derived from registration.

Dr. Guy Hinsdale said that, regarding the registration of tuberculosis the objections are chiefly imaginary. He does not believe in concealing from the patient the communicable nature of the disease, and thinks that if some treatment—Philadelphia treatment, New York treatment, or Boston treatment—is adopted, it is a makeshift, adopted from necessity. Cases no doubt recover there, lives are also no doubt very much prolonged by treatment, and therefore the principles that have been laid down must be applied daily. He contrasted the conditions found in a well-managed hospital with those in the homes from which the poorer patients come, the change being quite as great as when a patient with means is sent to one of our well-known sanitariums or health resorts. People who leave their homes for hospitals, sanitariums or even open resorts will do a great deal more for themselves under the new circumstances than they would have done at home. They will rise at 6 a. m., to drink mineral waters at a spring a half mile away; they will join an early procession walking barefoot on the damp grass; or they will readily conform to a regime, adapted to the needs of a tuberculous invalid, that they would soon tire of at home. The force of example helps them to keep in line with the rules best adapted for them. But left by themselves, in their homes, the patient who has some prospect of being cured will often neglect himself, and the physician may lose sight of him for long periods when the cough or other symptoms are not urgent, but when medical oversight is needed in just the same degree.

He does not think the prime requisite for treatment can be had in city homes. We do not realize how impure city air is until we go into the forest or to the seashore. It is like trying to cure diphtheria without antitoxin, or malaria without quinin, to treat pulmonary tuberculosis without pure air, and there is no such thing as pure air in our homes, no matter how well constructed, if we make mountain or sea air the standard. There is too much dust, smoke, carbonic acid gas and other products of exhalation, not to speak of pathogenic organisms. Another objection to our city homes is the fact that under ordinary conditions, during the colder season, we are subjected to great transitions of relative humidity of the air. We leave a house heated by a furnace, in the rooms of which the air has a relative humidity of 25, 30 or 35 per cent. We pass out into an atmosphere of 60, 70 or 80 per cent. relative humidity, and so we go in and out and adapt ourselves as best we can to these variations. Under the open air method of treatment, the patient has few if any of these transitions; he takes the humidity as he finds it night and day, for the most part. If he happens to be in Colorado or New Mexico, he has dry air all the time. Here he is inclined to make his "home" out of doors, and when he accomplishes that I will thoroughly indorse the "home" treatment of phthisis.

The place where a person has contracted phthisis is *not* a good place to remain in for treatment. If the patient is too poor or too advanced in his disease to go elsewhere, we have no alternative. But it has been observed that most consumptives live or die according to their strength of character in adjusting their life wisely to their disease, and for this reason many can not to be trusted to live again among the environments in which the disease has been acquired.

JOHNS HOPKINS HOSPITAL MEDICAL SOCIETY.

Meeting held March 4.

Dr. Howard A. Kelly in the chair.

Pernicious Anemia with Symptoms of Spinal Disease.

Dr. Thomas McCrae exhibited two cases, both males. One a laborer, aged 38, dates his sickness from December, 1898. He was able to work until March, 1900. Just before the latter date, he suffered from a carbuncle, and now complains of stiffness and numbness in his arms and legs. Knee-jerk is exaggerated. There is no complaint of the anemia, although hemoglobin is 50 per cent. and red corpuscles 2,500,000.

The second was an elderly man, whose sickness began 1½ years ago, when he fell down stairs and afterwards could not work. He complains of numbness of the limbs and holds himself stiffly, walking with stiffness and difficulty. The knee-jerks were elicited only with difficulty. Hemoglobin was 73 per cent. and red corpuscles 3,500,000.

Both patients are taking arsenic, and the first has very bad teeth, of significance in view of the recent investigations of Hunter, who believes that caries of the teeth bears an etiologic relationship to the disease.

Dr. W. S. Thayer said he had seen similar cases, with marked ataxic symptoms, although none had occurred in the hospital. He regards the outlook in such cases as very bad. He has been astonished to hear the value of arsenic in pernicious anemia and leucocythemia questioned recently by a distinguished Boston clinician. There is positive evidence of its usefulness in these conditions. Sometimes this occurs with great rapidity, although he acknowledges it is but temporary.

Frequency of Gall-Stones in the United States.

Dr. Celia D. Mosher said that the records of 1655 autopsies, 1038 male and 617 female, made at the hospital have been carefully analyzed, and Dr. Welch has assured her that no gall-stones were overlooked in these cases. Of the 1655, 6.4 per cent. were found to have gall-stones. This corresponds to the smallest prevalence reported in Europe. The majority of cases here occur after 30, and the maximum is reached after the age of 40. The condition is less frequent in the colored than in the white race, and males were affected only five-ninths as often as women. Examination of the records at the Almshouse (Bayview Asylum) shows that the paupers there have gall-stones twice as often as the hospital patients. She could offer no explanation of the greater frequency among the paupers and Europeans. As to the greater prevalence in women, she thinks it may be due to tight-lacing and the wearing of belts.

Dr. H. A. Kelly said he had for some time been in the habit of examining for gall-stones, and also into the condition of the appendix, in all cases of laparotomy, and he has found gall-stones present in 8 per cent. of all his patients, and especially with ovarian tumors.

Diabetes Mellitus Associated with Hyaline Degeneration of the Islands of Langerhans in the Pancreas.

Dr. Eugene Opie spoke of his latest researches on these bodies, which resemble the glomeruli of the kidney. They appear to have some relation to the blood. The most common lesion of the pancreas is inflammation. Diabetes does not occur in all cases of pancreatitis, and Dr. Opie has studied cases of the former, to find, if possible, the peculiarity in the pancreatitis with which it is associated. He has been able to distinguish two forms of pancreatitis. In one of these the islands are involved, in the other not, and it is with the former only that diabetes occurs. The condition found is a hyaline degeneration of the islands; the nuclei disappear and they become hemogeneous in appearance, sometimes granular. In obstruction of the pancreatic duct, as from calculus, or pressure, or in ligation of the duct in dogs, the acini are destroyed, but the islands remain intact; hence there is no diabetes in these cases. Dr. Opie, therefore, found in these peculiar lesions one cause of diabetes. Yet not all cases of the latter are associated with lesions of the pancreas, and there are still other facts regarding it which remain to be elucidated.

Dr. T. B. Futcher said that Dr. Opie's discovery was the most important addition made, in recent years, to the pathology of diabetes. From the facts elicited, it would seem probable that the islands of Langerhans elaborate some internal secretion, which is absorbed directly into the blood, and in some way is connected with diabetes.

Carcinoma of the Male Breast.

Mr. Warfield gave the results of his researches on this subject. There have been, altogether, 307 cases of carcinoma of the breast in the hospital, since its opening in 1889. Of these, 3 only have been in males. He has reports of 2 other male cases, which he has seen, outside the hospital, and 32 cases reported in the literature, making 37 in all. Of the 37, 18 occurred in each breast, and in 1 case the side was not given. The largest number in any decade was 13, between 60 and 70 years. In 28 there was no pain. In only 1 case was there a history of carcinoma in the family, the patient's mother having had this affection of the breast. Trauma bore a conspicuous part in the etiology in many cases. The cases that occurred in the hospital were designated in the records as "carcinoma simplex," a name to which Dr. Halsted objected as being indeterminate.

DENVER AND ARAPAHOE MEDICAL SOCIETY.

Meeting held February 26.

Diphtheria, its Treatment in Different Phases.

Dr. W. K. Robinson read a paper on the above subject, and related the histories of six cases recently treated by antitoxin. His conclusions are that the mortality is *nil* in all cases treated the first day with antitoxin, and that very large doses of the antitoxin should be used when the case is seen late in the disease.

Case of Double Bladder, Each with Separate Ureter, with a Study of the Urine of Both Kidneys.

Dr. E. P. Hershey reported the above rare case in a woman 28 years of age, who has been treated all her life for trouble connected with her bladder. When she was very young she had scarlet fever, and soon after that developed bladder symptoms, of which incontinence was the most annoying. Violent exercise would bring on pain. She had severe attacks of pain in the bladder, accompanied with fever and delirium about twice every year. At such times she would pass pus from the bladder. After the pus has been evacuated, which the patient learned to do by either pressing her finger upon the anterior wall of the vagina or by taking large vaginal douches, the symptoms would abate. Dr. Hershey made a careful study of the case and found that she passes two kinds of fluids from the external orifice of the urethra at different times. She passes either urine or pus. The two are never mixed. She passes urine more frequently. The pus passes only after it accumulates for a few days. The patient knows when the pus begins to accumulate. By introducing a catheter about one inch, he can, by directing it upward, obtain normal urine, and by pointing the curve downward obtain pus. Vaginal examination reveals a vesico-vaginal diverticulum. The left kidney is palpable and tender on pressure. He has examined the patient under various conditions (postures) after having washed the two bladders separately, having previously given her various drugs—methylene blue, etc.—and the results were uniform. His diagnosis is: Left surgical kidney, double bladder, each having a separate ureter.

Dr. Leonard Freeman, who examined the case carefully, said that there are not a dozen instances of double bladder mentioned in medical literature. He has seen, however, several of diverticulum of the bladder. He is not sure it is a double bladder; it may be a single one with a transverse partition. He could elicit pain in the kidney by pressing upon the diverticulum in the vagina. He dwelt upon the difficulties with which the surgeon may meet when operating on such cases.

Report of Operations for Radical Cure of Hernia.

Dr. C. A. Powers reported thirty-two cases of radical cure of hernia performed during the last six years, made upon twenty-nine patients, with only one death. The death occurred in a patient 35 years of age, and in the best of health, upon whom he operated for a reducible inguinal hernia. A tumor below Poupart's ligament was found to be a femoral hernia, which was also operated on. Two days after the operation the patient became restless, had a chill, and the wound became puffy. Pus was found at the saphenous opening. Chills continued and the patient died from pyemia and septic pneumonia. Dr. Powers ascribes the fatal issue to the use of kangaroo tendon, which probably was not thoroughly sterile.

Dr. Leonard Freeman has seen suppuration following the radical operation for hernia, and believes it is due to infection carried by the fingers of the operator, impossible of prevention by any other method except wearing rubber gloves. It is important to find out that there are no holes in the gloves, a matter hard to ascertain. He purposely punctured gloves, and filled them with water and there was no leakage. To avoid possible injury to the gloves he used instead of needles, a ligature carrier.

Dr. I. B. Perkins reported a case in which he used two kinds of sutures, and all the kangaroo sutures suppurated.

CHICAGO SOCIETY OF INTERNAL MEDICINE.

Meeting held February 26.

The president, Dr. John A. Robison, in the chair.

Municipal Prevention of Disease.

Dr. Heman Spalding read a paper on this subject. He stated that every municipal health officer should be invested with great discretionary powers, to be used when the more desirable methods of persuasion and education fail to protect the public against disease. He should have the power to enforce the prompt reporting of all infectious and contagious diseases by physicians and citizens; also the power to remove any person, sick with an infectious or contagious disease, to a place where there will be no danger of communicating it to others; and the power to enforce vaccination at all times. He should have at his command a well-equipped isolation hospital for smallpox, one for diphtheria, one for scarlet fever, one for tuberculosis, and another for measles, and it would be well to have one for whooping-cough. The isolation hospital is necessary for those who have no means at home for the proper care and precautionary measures necessary to prevent the spread of contagion.

Living Rooms Back of Stores.—The building ordinance of a large city should prevent the abominable and criminal practice of a family living in the rear of a store or shop of any kind. The partition between a store or shop and the living-rooms should be substantially built and air-tight, and no communication with the store or shop should be allowed through this partition. Scores of times the essayist has found children sick with scarlet fever, diphtheria or smallpox in the living-rooms in the rear of a store or shop, where a flimsy board partition half way up to the ceiling concealed the disease that was carried to the front room and conveyed to the patrons of the store, by the mother or father who acted as nurse to the sick and clerk for the store. It often occurs that the fear of injuring business prevents the shopkeeper from employing a physician, knowing that the doctor will report the case to the health department if he is called. The sale of milk should be prohibited from any store or shop that has any direct communication with living apartments.

Education of People Necessary.—We must have proper and efficient laws as a basis for controlling communicable diseases, but the greatest factor in keeping contagious and infectious diseases out of a city is the education of the people as to the danger of contagion, and how to destroy it and avoid communicating it to others. Every large city needs an intelligent, persistent and authoritative distribution of correct information upon the subject of infectious and contagious diseases. If this information is freely and persistently given out, the sum-total of the knowledge on this subject will be greatly enlarged, even among the most ignorant, and it will be a perpetual aid in saving children from sickness and death. The general practitioner will do good every time he informs a family that scarlatina and scarlet fever are different names for the same disease. Hundreds of people believe scarlatina to be a harmless, non-communicable disease. He will do good every time he teaches a family that varioloid is only another name for smallpox. There are many people who believe varioloid is not contagious, although all have a fairly clear idea that smallpox is contagious. He could give instances where smallpox has been transmitted to others because of ignorance of the true nature of the term varioloid. Life can be saved by correcting the erroneous impression, held by the laity, that measles in a child is comparatively harmless. The death-rate from this disease in children under 2 years of age is not less than 20 per cent. of those attacked. The same is true of whooping-cough. The profession should continue to instruct the people in correct methods of caring for those suffering from infectious disease and continue to preach cleanliness everywhere.

Dr. William A. Evans followed with a paper on "Individual Prophylaxis," which will appear in The Journal.

Immunity as a Factor in the Prevention of Disease.

Dr. Adolph Gehrmann, who read this paper, briefly presented such facts as have value in an experimental or practical way toward proving the efficiency of certain methods in preventive medicine. Outside of the practical application of vaccination against smallpox, the entire development of preventive inoculation began with Pasteur's studies of chicken cholera, anthrax and hydrophobia. The aim of his research was essentially toward artificial immunization, while the German students evolved true curative methods. Although in some cases there may be doubt, still, apparently every infectious disease develops more or less resistance in the infected individual when he recovers. It would, therefore, appear that the strongest development of acquired immunity would be occasioned by an attack of the disease which is just short of killing the individual. Theoretically, preventive inoculations are most scientific, but they can only become practically permissible when the life of the susceptible one is beyond doubt assured. It is unreasonable to consider that acquired immunity has absolutely defined relations toward possible infection. It is always a matter of degree dependent on some recognized factors, as age of the individual, his general vitality and the severity of the immunizing experiment, as well as upon more remote factors, as chemical constitution of his tissues and the rapidity of metabolic changes. It is, therefore, almost impossible to say, in any individual case, what the results of preventive inoculation will be as regards thorough protection and duration of the protective influence. A repetition of the experiment in times of exposure should have less danger attached than in the original inoculation. There is only one way in which to positively test immunity, and that is by an exposure to suitable virus. It can be stated that active immunity is only preventive and should never be attempted for curative purposes; while passive immunity is both preventive and curative, with its greatest value as a curative agent.

After summarizing the results of the workers in the various fields, Dr. Gehrmann stated that how far preventive inoculation can be carried in protecting an individual against a number of diseases must at present remain an open question. It would seem more rational to limit the immunization of patients against bacterial diseases to such times as they are in danger of exposure or have been exposed.

Diet and Exercise as Preventive Measures.

Dr. N. S. Davis, Jr., said that indiscretions in diet, and failure to take exercise, are among the most important causes of ill-health. While the illnesses that result from dietetic indiscretions and from lack of sufficient exercise are, for the most part, of minor importance, in that they do not create much mortality, and therefore do not appear in the death returns, yet they are of the greatest importance. They limit the amount of work individuals can do. The frequency with which maladies occur, due to indiscretions of diet, can not perhaps be more strongly stated than in the words of Sir Henry Thompson, who has said that more than one-half of the diseases which embitter the middle and latter part of life—among, at least, the middle and upper classes of the people—are due to avoidable errors in diet. If this is true, it is perfectly evident that fully one-half of the maladies in middle and later life are affections which can be prevented under careful supervision of physicians, and which should be carefully studied from the standpoint of prevention. It is hardly necessary to more than mention the fact that errors in diet and dietetic management are among the most common causes of ill-health in infancy and in the early years of childhood. Physicians are familiar with the illnesses that arise from indiscretions in diet, and those that lead perhaps to fatal results, and therefore the mortality statistics have been vastly improved by the introduction of measures in large communities for the prevention of many of the illnesses that arise from improper feeding in infancy and childhood.

In order to prevent the dissemination of food which might propagate disease, the universal public inspection of food would help very greatly. Almost all of the parasites that are conveyed by food can be destroyed by heat—by cooking. Therefore, proper cooking is of the utmost importance as a means of preventing the dissemination of illnesses in this way.

Dr. Davis discussed at considerable length the questions of too much exercise and not enough exercise. Finally, he emphasized the importance of food and of exercise as factors in the production of disease, and, when rightly regulated, serving as factors in the promotion of health.

Dr. Daniel R. Brower followed with a paper on "Prevention of Insanity," which will be published in The Journal.

NEW YORK ACADEMY OF MEDICINE.

Meeting of the Section of Medicine, held February 19.

Dr. John H. Huddleston in the chair.

Pleurisy.

Dr. James J. Walsh presented a brief paper, founded on the work of Widal, on "Cyto-diagnosis." This method consists in examining some of the centrifuged pleuritic exudate with the microscope. The earlier the stage at which the examination is made, the more numerous are the polynuclear cells. Mechanical pleurisy, he said, is characterized by the presence of patches of endothelial cells, while pneumococcus pleurisy is characterized by the presence of a few red blood-cells, a few scattered lymphocytes and many mononuclear cells.

Dr. Alexander Lambert discussed "The Bacteriology of Acute and Chronic Pleurisy." He said that 30 to 40 per cent. of all primary pleuritic effusions are known to result from tuberculosis. Syphilis is not a rare cause, and pneumococcus infection is common, the effusion often being purulent.

Dr. C. E. Nammack treated "Early and Late Tapping in Pleurisy." He gave the following rules for guidance: 1, when life is directly threatened by asphyxia from compression or from cardiac weakness; 2, when the fluid has risen to the third interspace anteriorly, as such effusions rarely disappear spontaneously; 3, in all lesser effusions where spontaneous absorption is unduly delayed, resort to tapping. In a general way, the rule may be laid down that when an effusion has remained stationary for more than one week, a portion should be removed by aspiration, as this will often in itself be sufficient to cause the entire removal of the fluid.

Dr. C. H. Lewis read a paper on "The Use of Methylene Blue Injections in Pleurisy with Effusion." He said that he had been led to devise this method of treatment not only because he had learned that spontaneous absorption gave permanent results, but because it had occurred to him that if by the injection of some substance the formation of adhesions could be promoted, subsequent aspiration would effect a prompt cure. Methylene blue accomplishes this, and is an antiseptic, diuretic and anodyne. He withdraws a certain quantity of the serous effusion, mixes it in a graduate with 10 or 15 grains of methylene blue, and returns the mixture to the pleural cavity. In the 23 cases of serofibrinous pleurisy so treated, the average duration of treatment was fourteen days.

Dr. Julius A. Becker described "The Routine Treatment of Pleurisy at the Mount Sinai Hospital." He said that where pleurisy follows an attack of rheumatism, antirheumatic remedies are prescribed. The pain is relieved by the local use of blisters, the Paquelin cautery and strapping, and by the internal administration of morphin, codein or heroin. It is the custom to aspirate a case of serous pleurisy as soon as there is evidently much interference with the action of the lung. The records show that this practice has shortened the duration of the disease, and has reduced to a minimum the thickening of the pleura and the permanent crippling of the lung. The occurrence of pain, or coughing, or the withdrawal of a little blood-stained fluid should be taken as an indication that no more fluid should be aspirated. In no case has there been a severe hemorrhage, or has empyema been traced to infection at aspiration. When there is a large purulent effusion, it is better to remove some of the pus by aspiration before operating, as by this means the danger of shock from the sudden withdrawal of a large quantity of fluid is diminished.

Dr. M. Manges expressed some doubt as to the practical outcome of Widal's labors. The judicious removal of a portion of the effusion holds out the best chance of recovery, though it should be borne in mind that it is quite possible that the presence of a small quantity of fluid in a case of tuberculous pleurisy may be beneficial. He has seen one death result from simple aspiration.

Dr. H. Lilienthal suggested that in performing thoracentesis the danger of skin infection should be avoided by nicking the skin with a knife before introducing the aspirating needle. For cases of empyema he advocates a large opening as preferable to the use of a drainage-tube, and cautions those who prefer to use the tube to be sure that it is no longer than is absolutely necessary. After the operation, it is advisable to make use of Koenig's method of postural drainage.

Dr. S. S. Burt said that while he has been much interested in the methylene blue treatment, he has been backward about giving it a trial because of some experiments published about five years ago, and which seemed to prove that this substance causes acute parenchymatous degeneration of the kidneys and liver and acute catarrh of the bladder.

Dr. Andrew H. Smith also emphasized the importance of using a very short drainage-tube in the chest. He advises his patients, on recovering from pleurisy, to make frequent efforts to aid the expansion of the lung by simply closing the nostril and making a gentle expiratory effort.

Dr. Henry P. Loomis said that he had long ago come to look upon the occurrence of pleurisy with effusion in a case of pulmonary tuberculosis as a conservative effort of Nature, and is accordingly slow to interfere with its under these circumstances. He believes that it acts beneficially by splinting the lung and securing rest for this organ.

Dr. Egbert H. Lefevre said that his own studies in cytodiagnosis, following after Widal, ended in discouragement. Long before there is any outpouring of fluid in serous pleurisy there is a restriction of the movements of the affected side. He has a very high opinion of the value of the salicylate of sodium as a remedy for promoting the absorption of the fluid. In his hands, the best local application has been inunction with blue ointment.

Dr. William H. Thomson called attention to the need for caution in gymnastic exercises, particularly those requiring motion of the arms over the head, after pleurisy. He always instructs his patients on this point, because he has known hemorrhage to occur even several years after an attack of pleurisy, simply as a result of such exercise causing rupture of adhesions. It is well to have the chest strapped for six months after a pleurisy.

Dr. Lewis, replying to Dr. Burt concerning the possible deleterious action of methylene blue, said that in his cases the urine has been carefully examined daily during the treatment, and there has not been the slightest evidence of any harmful effect on the kidneys.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Meeting held in San Francisco, February 12.

President Dr. George H. Evans, in the chair.

Bacteriologic Diagnosis of Diphtheria.

Dr. W. H. Kellogg read a paper on this subject. He said that the fact that the Klebs-Loeffler bacillus is the cause of diphtheria, is demonstrated by: 1, its constant presence; 2, its isolation in pure culture: 3, the reproduction of the disease in animals by inoculation with pure culture; and 4, the finding of identical lesions and distribution of organisms in the experimental as in the original disease. The nature of the pseudomembrane was described, and the author gave a thoughtful description of the morphology and cultural characteristics of the bacillus. He detailed the technic of conducting the bacteriologic examination. Several slides should be prepared from each culture-tube, one from each kind of colony that appears; or, if an even layer is present, material should be taken from different parts of the tube. It frequently happens that the bacteriologist fails to find the organism in cases that are true diphtheria, and this may be due to the fact that an antiseptic spray has been used not long before taking the swab, or the swab may have been faultily infected. Another source of error lies in the fact that in cases of mixed infection with staphylococci, the surface of the culture-tube may be thickly studded with colonies of the latter, between which are minute colonies of the diphtheria bacilli, their growth inhibited by the preponderating growth of staphylococci. One negative examination should not, therefore, be taken as conclusive, especially if the clinical aspect of the case does not coincide; but repeated examinations are positive in their results. He referred to the persistence of the bacilli in the throat after the disappearance of the false membrane, and urged the necessity of making later examinations at least once a week in order to determine when to raise the quarantine.

Specific Treatment of Diphtheria.

Dr. George H. Evans read a paper calling attention to the unreliability of statistics when compiled from limited sources of information, but such statistical reports as those furnished to the American Pediatric Society at Montreal in 1896, are to be regarded. Antitoxin was distributed to the physicians of San Francisco by the board of health of that city, for use among the destitute poor, from November, 1897, to April, 1900, and from the clinical reports furnished by the attending physicians of the fatal cases, the author drew some illustration of the value of the serum given early and in large doses. The mortality of the patients thus treated was only 13 per cent., but he believes that this mortality could have been materially reduced had use of the antitoxin been carried out more fearlessly. Thus, of the fatal cases, a very small minority of them received the serum before the fourth day. Such delay is sometimes unavoidable among the poor, where medical aid is not as a rule called early, but large doses should be used, and of these fatal cases, in only six was as large a dose as 4000 units used; 4000 units can be used as the initial dose in a mild case with absolute impunity, and smaller doses than 2000 units should not be used for any purpose other than immunization. In nasal and laryngeal cases, and cases of mixed infection, 3000 or 4000 units should be considered the minimum initial dose. The large doses given by McCollom, of Boston, were referred to, and the reduction in mortality in the apparently moribund cases since its administration in this way was begun. Disagreeable effects following its use were passed over as comparatively unimportant. The increase in the number of cases of paralysis since its introduction was attributed to the fact that more patients survive, and either recover, or live sufficiently long to become paralyzed. That the paralysis is due to the toxins absorbed and not to the antitoxin, has been quite clearly demonstrated, both clinically and experimentally. Ransom's work in Behring's laboratory was particularly referred to. Thirty-four per cent. of the fatal cases in the San Francisco series had paralysis. Almost all of them were treated late in the disease, and small doses were used in every case, 4000 units being the largest. The indications for the use of antitoxin must depend on the clinical diagnosis. To await the bacteriologic confirmation of the diagnosis is a sacrifice of life in many instances, and particularly is this so in some of the laryngeal forms where no membrane is visible, and where repeated efforts fail to produce any growth on culture-media. Antitoxin and an appropriate syringe should be part of every physician's armamentarium, and in the presence of any suspicious exudate, the serum should be used and then a culture made.

Treatment of Diphtheria.

Dr. W. B. Lewitt, in a paper on the "General and Local Treatment of Diphtheria," said that while he is an ardent advocate of the early and vigorous use of antitoxin, he has not yet arrived at that frame of mind that would lead him to depend in all, or even in a majority of cases, on the good effects of that agent alone. In regard to the general treatment of the disease, the object to have in view above all others is to maintain the strength of the patient by rest and the administration of food and stimulants. He urged the necessity of keeping the blood well charged with the products of digestion, as a means of inhibiting to a great extent the formation of toxins; and, therefore, food should be given every two or three hours, and in quantities as great as can be assimilated. He considers milk the best article of diet, and in children under 5 years of age, it should be the only one. In cases where there is a refusal to take food, he urges forced feeding, having no confidence in rectal alimentation, as the enemas in children are seldom retained, and it is a question how much is absorbed. Stimulants are called for in the majority of cases, and should be commenced early. Regarding the internal administration of iron, he only uses it during convalescence. Referring to local treatment, he recalled the days when tincture of iron, carbolic acid, nitrate of silver, and such drugs were used so commonly in the throats of these patients, and drew a vivid picture of the piteous results of such treatment. Where the membrane is confined to the tonsils, local treatment is not necessary. Where the area is greater, all that can be accomplished by any drug used locally can be done by warm sterile water. He advocates using a stream of warm water through the nasal cavities with an ordinary syringe, thereby washing out the nares, nasopharynx, and pharynx. There is generally much less difficulty in doing this than in making the ordinary application to the throat, and it has the very great advantage that the patient does not have to be raised from the recumbent position. In considering laryngeal cases he referred to the good results obtained at the Children's Hospital by the use of creosote in vapor, and the sublimation of calomel. By this method he thinks the necessity of intubation or tracheotomy is frequently done away with, and life prolonged until the good effects of the antitoxin become manifest.

Sequels of Diphtheria.

Dr. Wm. Fitch Cheney read a paper on this subject. He drew a distinction between the diseases occurring coincident with diphtheria, which are more properly called complications, and the true sequels which are the diseases that come after it, as a consequence of it. These are: 1, disease of the blood; 2, disease of the heart; and 3, disease of peripheral nerves. Disease of the blood commonly follows diphtheria in the form of a severe grade of anemia, and calls for the usual remedies employed for secondary anemia. Disease of the heart is either the result of a myocarditis occurring as a complication, or is due to changes in the nerves supplying the heart muscle. The heart muscle almost invariably suffers from parenchymatous or fatty degeneration, to a greater or less extent. and under the influence of the diphtheritic toxins circulating in the blood, and the condition of the pulse should be carefully watched even after convalescence is well established. The treatment of this condition consists first of all in rest. Rest in bed should be insisted on for at least one week, and better for two weeks, after the temperature has become normal and the throat is free from membrane. If the pulse, in spite of this rest, develops any variations from the normal, whisky must be used freely and strychnin given regularly in full doses.

Disease of peripheral nerves is the most common sequel of diphtheria, and is a neuritis. caused by the absorption of toxins manufactured by the bacillus in the throat. Autopsies on human beings and experimental evidence prove this. The paralysis resulting from this neuritis is usually not serious, except where it involves the muscles of respiration, and the heart muscle. It is always difficult to say how much of so-called "heart failure" after diphtheria is due to changes in the myocardium and how much to changes in the nerves supplying the heart muscle. Sudden death may occur from either; the premonitory changes in the pulse are practically the same in each; and fortunately the same treatment that is indicated for one is equally indicated for the other. The author thinks there is no relation between the severity of the diphtheria and the occurrence of the paralysis. He considered the question as to whether treatment of the primary disease with antitoxin has power to prevent the occurrence of paralysis as doubtful, but comparing the report presented to the American Pediatric Association in 1896, with other statistics on the incidence of paralytic sequels, the difference is slightly in favor of the antitoxin treatment.

Referring to the treatment of the paralyses involving the palate, the eyes, and limbs, recovery ultimately takes place regardless of interference, but probably more promptly, by the use of strychnin and iron tonics internally, and the application of electricity externally; however, the most valuable element of all in the treatment is time. On the other hand, the forms involving the action of the heart and lungs too often end fatally in spite of every therapeutic effort. The measures to be employed in the treatment of respiratory paralysis are absolute rest, strychnin hypodermically in full doses, and electricity applied to the respiratory muscles by the Faradic current. For threatened cardiac paralysis the treatment is again complete rest, strychnin hypodermically, and alcoholic stimulants by the mouth or under the skin.

Syphilitic Reinfection Simulated.

Dr. A. B. Grosse reported a case simulating syphilitic reinfection—a banker, aged 37, who eleven years ago had a primary lesion, followed in seven weeks by secondary symptoms. He was subjected to an antisyphilitic treatment for three years, after which he was given permission to marry. He has two children, aged 7 and 2½ years respectively, both of whom were born at term and are healthy at present. His wife is healthy and has had no miscarriages.

After a suspicious coitus on Oct. 30, 1900, he was seen by the doctor on November 24, who found an ulceration to the left of the frenum, which looked like confluent ulcerated herpes. The sore was not indurated. One gland in the left groin was enlarged, and others of the groin were palpable; the epitrochlear and axillary glands were also palpable, and there was enlargement of several cervical glands. On November 28 he was very much improved, and on December 7 was absolutely well, with no sign of a scar. On Jan. 8, 1901, having taken a dose of antipyrin for headache the day before, a roseola of the trunk and limbs appeared—no itching attending it—and an adenopathy as before. On January 11 small papules were found in the center of several of the roseolar spots, which were slightly squamous. On January 16 the rash had entirely faded.

On January 22 a similar rash came on immediately after taking 20 grains of antipyrin, but had entirely disappeared by February 2, and on February 13 he had another outbreak after taking the same drug.

The case showed the necessity of carefully observing a patient before making a diagnosis of reinfection. While the eruption differed from any antipyrin rash he had previously seen described, the doctor thinks we must consider antipyrin as the only etiologic factor, as the rash was produced three successive times after the ingestion of the drug.

PHYSICIANS' CLUB OF CHICAGO.

Meeting held February 25.

Dr. William E. Quine in the chair.

The Ravages of the Venereal Diseases.

Dr. J. Clarence Webster discussed "Their Extent: Can they be lessened?" He stated that their extent and ravages might be considered from many points of view. Unfortunately, a great deal of accurate information regarding any of the venereal diseases is not obtainable as applied to many centuries. Although much is known about syphilis at the present time, there is considerable discussion as to how late it appeared among the Caucasians. There is one school that holds that syphilis was only known in Europe after Columbus discovered America, and it is said that his sailors imported the disease from the West Indies to Europe. Another school believes that syphilis was known in China and Japan many centuries before the discovery of America.

With regard to the gonococcus, the speaker quoted a passage from Leviticus, supposed to have been written by Moses, which is taken generally to refer to gonorrhea. In 1872 Noeggerath published a paper in which he drew attention to gonorrhea and placed it in a new light, and it is owing to Noeggerath's work that the profession holds its present views regarding the importance of this disease in the community. This author stated that of every 1000 men in New York City, 800 have this disease; that of every 100 men who have gonorrhea, 90 per cent. are never cured. He also holds that 3 out of every 5 married women in New York suffer from the effects of this disease. There is no more important factor in producing disease, misery and distress in women than gonorrhea. He is perfectly certain that the rank and file of practitioners look on gonorrhea in women as did our forefathers, and that our present knowledge of the gonococcus and its ravages has not permeated the ranks of the profession. If the rank and file of the profession do not understand these things, it is not to be wondered at that the laity do not. Noeggerath's views are not very well known by the laity. A chronic gonorrhea may be apparently cured, but there may remain a condition which might not be called chronic, but rather latent. Latent gonorrhea in the male is not very well understood. It has been quite clearly shown that in females the gonococcus acts only on the urethral mucosa primarily and on the mucosa in the cervix. It does not attack the vagina nor the vulva, because it can not penetrate the stratified epithelium like the vagina or vulva. However, in certain cases it may do so. In young children a typical gonorrheal vaginitis or vulvitis may be observed. In old women, with thin epithelium, typical vaginitis may be noticed, and particularly in connection with women in labor. In pregnancy and labor a large percentage of women are attacked as a result of the softening, the thinning, the bruising of the tissues, so that the gonococcus plays an important rôle at this time. Latent gonorrhea in the female, as in the male, has a tendency to change into an acute virulent condition at these times. There is no doubt but a man may cohabit with a woman for a long time and never give her any trouble; the gonorrheal virus may never reach the uterus, and the small amount of discharge which comes from the male penis may never affect the urethra or other parts of the woman, but let her become pregnant and the risk is enormously greater. Let her be at the end of pregnancy, and the risk is still greater. If the public were educated to put themselves under the care of the very best physicians and demand the most careful, conscientious and constant treatment for weeks and weeks, the effects of gonorrhea would be enormously reduced, particularly as applied to males. The same thing holds with regard to women. The ordinary routine treatment of women who have gonorrhea by the vaginal douche is of very little avail. The physician should get at the seat of the disease at once, namely, the urethra, the orifices of the ducts of the Bartholinian glands, and the mucosa of the uterus. Not one physician in a hundred treats acute gonorrheal cases in that way. He trusts to luck, and prescribes an ordinary diet and rest. He believes the ordinary treatment of gonorrhea in the female is responsible for the enormous amount of inflammatory mischief which is so commonly found.

Dr. Harold N. Moyer discussed the subject of "Circum-sion in Restricting the Spread of Syphilis." His paper will pear in The Journal.

Dr. Edmund Andrews spoke of the "Diminution of Venereal iseases by Educating the Public." He said that the periodical ess, consisting of the newspapers and the magazines, can, if it ill, do a great educational work. There is, however, an obacle of large dimensions before them. The American people e the most squeamish of all nations as to any public allusion sexual matters. Any warning and information on the subct of venereal diseases would drive away subscribers and reck the finances of any periodical venturing on it, unless the eas were expressed with almost superhuman caution and licacy. Therefore, at present, the profession can not comand efficient help from the press. Yet he thinks the public's ueamishness is slowly abating. If the profession does its ty, the time will come when the periodicals will give some sistance.

Each physician acting in his own individual capacity can do uch to educate the public. There are over one hundred thound medical men in the United States. Each of them on the erage has a patronage of about seven hundred persons, and stands before them as a trained and trusted expert, whose inion in such matters is valued above every other in the mmunity. Physicians are not hampered like the stockholds of periodicals. They have a thousand opportunities to eduate their patrons and others about sexual vices and venereal seases. Already the public owe to their family physicians arly all they know on this subject, and if physicians do their ty they can educate the public still more.

Recently, Dr. Frederic Bierhoff, of the Berlin General Poliinic, made a study of the sources of 381 cases of gonorrhea in ales, with the following result: The persons from whom the isease was contracted were as follows: open prostitutes, 12; andestine prostitutes, 44; kept mistresses and actresses, 138; orking women and servant girls, 167, and married women, 20. he chief of police in Berlin informed the speaker that there re grave reasons why it is impossible to completely enforce e law. He judged that he could only keep about one-fourth the actual prostitutes under his control. He added that r important reasons he could not undertake the regulation kept mistresses, nor of several other classes of loose women; lso, it is to be remembered that a registered woman between xaminations may carry infection from one male patron to nother without having the disease herself.

In educating the public the medical profession can sometimes ork through other professions. For instance, if physicians go t it in the right way they can do a great deal of good through he clergy. The two professions have to some extent weakened heir forces by pulling against each other instead of working eartily together in an alliance to promote morality and good anitation. Both sides have been at fault. The clergy are very highly educated and honestly devoted to the intellectual and moral advancement of the nation. Being almost as numerous as physicians, they have a powerful influence in every community, so that in planning for the sanitary education of the public, it is important to secure their co-operation. Morality and sanitary science are natural allies and ought to march forward hand in hand. Meanwhile, the clergy, like the press, are a little hampered in public expression by the squeamishness of modern society; yet they contrive to preach sermons without offense on the seventh commandment and to denounce both sexual and all other immorality. If they possessed a little more education on venereal diseases, they could with their constant opportunities for confidential advice do much to make their knowledge of disease a powerful weapon against vice, and thus promote both morality and health. A few sanitary lectures added to the curriculum in theological seminaries would furnish every graduate with the necessary facts.

Another power is the great army of teachers. Even outside of the classrooms, they become by their daily contact with others very influential and well-trusted advisers. In the normal schools and other institutions where they prepare for work, they should have a brief course on the prophylaxis of all infectious diseases. In conclusion, Dr. Andrews confessed that a complete education of the adult public is impossible, but he believes that by slow degrees the profession can diffuse light enough into the darkness to be a valuable guide to those who now wander in the mists of ignorance.

Prof. Charles R. Henderson, of the University of Chicago, discussed the moral aspects of the subject. He said that every man is a moral leader, and those who possess special knowledge of the venereal diseases are particularly responsible, in his opinion, for the kind of teaching they give, making allowance for human frailties and weaknesses. One of the curses of the present day is the free distribution of quack literature among young people. The distributors of such literature should be flogged.

Dr. Joseph Zeisler spoke of the establishment of special hospitals for the treatment of venereal diseases, saying it is to be regretted that there is not a hospital in Chicago for taking care of such cases. Chicago is considerably larger than Vienna, yet Vienna has a hospital in which there are 600 beds for the management and treatment of these diseases. In Paris there are hundreds of beds in hospitals, for the same purpose. The principal reason why we have no hospitals in this community for the treatment of venereal diseases is because our public-spirited citizens have not the courage of their convictions. There is not a single intelligent man among the millionaires of Chicago who does not know that there is need for such a hospital. The educational value of such institutions, aside from the treatment and care of such patients, would be immense to physicians. Students would have the advantage of seeing a large amount of material, and of receiving instruction in regard to the venereal diseases by eminent men. Were such hospitals established in this and other cities, it would not be long before an avalanche of scientific knowledge would come forth which would be of incalculable benefit to the medical profession.

Judge Lorin C. Collins spoke of the "Control of the Venereal Diseases by Legislative Enactment." He did not think any large number of the physicians present would agree on what would be proper legislative enactment for the purpose of controlling and diminishing venereal diseases in the community. If physicians should substantially agree among themselves, they would run up against a very powerful body, the public, who probably would not agree with physicians. The same is true of legislators. He was a member of the legislature in 1879, when St. Louis licensed the social evil by an ordinance passed by the city council, and he believes there was passed in the legislature an emergency clause bill prohibiting the licensing of prostitution by any city in Illinois. He thinks that if a hospital were established for the cure of venereal diseases, it would meet with very strong and determined opposition, the opposition contending that in establishing hospitals for the cure of venereal diseases it would be encouraging immorality and vice. This opposition would come from the best classes in the community, from the members of churches. The constitution of this state says that the right of trial by jury, as heretofore enjoyed, shall remain inviolate, and that no man shall be deprived of his life, liberty or property except by due process of law. A case was cited by the speaker. If a man, in the most virulent and dangerous stage of smallpox, should walk down Clark Street, there is no power in Illinois by which that man can be taken and carried forcibly to a place where he can be isolated. No law will authorize this. Many years ago he examined the public health laws of England, and stated that their method of treating venereal diseases is more by persuasion than by force. A person afflicted with a venereal or contagious disease is persuaded to enter a hospital for treatment, and the British law contains no provision whereby a person suffering from smallpox, for instance, can be taken by force to a hospital for treatment. A person may be fined for spreading contagion; he may be imprisoned if the fine is not paid, but he considers this of no value whatever. The person must be taken at the right time by a summary process. He said that we are more particular in this state in all matters affecting the liberty of the citizen than any state in the Union, and this has been the tendency of the Illinois Supreme Court, therefore, anything physicians might do toward securing legislative enactment for the control of venereal diseases would have to be done very carefully and conservatively. Chicago could not pass an ordinance that would be efficacious. Power has not been granted the city as yet by the state, and it would be necessary to have legislation on this subject by the general assembly. He feels that something should be done toward legislative enactment for the control of venereal diseases, and he believes a move on the legislature of the state, with such a body as the medical profession back of it, would be a great educational force which would lead to the dissemination of information on these subjects and would eventually bring about some good. But any measures for the control of the venereal diseases would have to be handled in a conservative manner, and they would have to be very judicious to meet with the approval of the solons at Springfield.

Dr. L. Blake Baldwin said that one public-spirited citizen had already spent more than $3000 toward a hospital for the treatment of venereal diseases, and that this hospital was established last June, since which time the speaker has filled over 1600 prescriptions for gonorrhea and syphilis. He has at present in the institution forty patients suffering from either gonorrhea or syphilis, or both.

Dr. John M. Dodson firmly believes that the time has come when the medical profession should take more active measures to extend the knowledge which it has acquired in recent years in regard to the prevention of diseases, and of public hygiene in a general way. He suggested that the profession, through its organized societies and medical colleges, especially those connected with institutions of general learning, should institute extension courses, so that a series of lectures, carefully prepared and illustrated properly, may be given to the various members of social clubs and other organizations. He believes, through the medium of such organizations and institutions, that lectures on sexual physiology and anatomy, also on the venereal diseases, their dreadful consequences and proper mode of prevention, would do a great deal of good in this city, if wisely conducted.

Dr. Denslow Lewis expressed satisfaction that this symposium had been held. He referred to instances where mawkish sentimentality had prevented a free discussion of these important matters even in professional circles. He condemned illiberal criticism of honest efforts to benefit humanity by calling attention to the truth. He favored a thorough investigation of all matters pertaining to sex relationship and venereal diseases, and a diffusion of knowledge of these subjects. He urged the consistent study of infection as occurs when other infectious diseases are considered. The education of the child in sexual matters is of great importance, and can scarcely begin too early. Young boys should appreciate the dignity of virility. They should understand that when they grow up to be men, under suitable restrictions of civilization, religion and education, they may hope to be privileged to indulge the sexual function as their fathers have done before them for the perpetuation of the species. They should be taught that nothing in their youth should debase them or interfere with the performance of this function at the proper time under suitable conditions. They should be taught also that young women are under their protection; that under proper restrictions these young women will become mothers, and for that reason nothing should be done to them which will debase them or interfere with the proper performance of their functions. They should be taught regarding the venereal diseases in detail; they should know that gonorrhea is not a simple disease, as ordinarily understood, and that syphilis may last for years, affecting the nervous system when all outward manifestations of the disease have disappeared. These matters are of the greatest importance in diminishing the ravages of the venereal diseases. They can only become known by proper instruction by competent medical men. Furthermore, among married people these matters should receive attention. He believes that in many instances venereal diseases are contracted because the sexual relations between husband and wife are unsatisfactory. He thinks it is the duty of physicians to instruct the men and women of their clientele regarding the details of the sexual act. He believes it to be the part of wisdom for physicians to speak out frankly and honestly to patients in that regard, for, oftentimes, even the integrity of the home is threatened when the sexual relations between husband and wife are not mutually agreeable.

The subject was further discussed by Drs. Charles S. Bacon, Hugh T. Patrick and L. Harrison Mettler.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Seasickness.

Memphis, Tenn., Feb. 27, 1901.

To the Editor:—Will you give a short statement of the causes, symptoms and best mode of treatment of seasickness? In causes, I mean the pathology, if any is known. And kindly refer me to some text-book where I can find something about seasickness. Subscriber.

Ans.—The pathology undoubtedly lies in the disturbances of the cerebral circulation, producing anemia of that organ. The symptoms are nausea and vomiting of the severest type, accompanied by great mental depression.

Dr. Daniel R. Brower recommends for such patients the following outline of treatment: Avoid excessive fatigue and mental worry for several days previous to sailing; proper attention must be given the gastro-intestinal tract by taking a light diet and producing free catharsis by means of a full dose of massa hydrargyri, followed at the proper time by a saline purgative. This treatment should be carried out two or three days before going on board ship. As soon as there has been a thorough evacuation one teaspoonful of the following should be taken three times a day until time to go aboard:

℞. Potassii bromidi ....ʒv 20|
Aq. menthæ piperitæ q. s. ad............℥ii 64|

M. Sig.: One teaspoonful in water three times a day.

As soon as the patient arrives on board ship he should take a dose of chloralamid (gr. x-xv, 0.66-1), lie down and remain in a horizontal position until at sea and when the effects of the medicine have worn off, he should move around on deck to ascertain whether he has obtained his "sea legs," to use the nautical expression. If he finds that he is still inclined to be seasick the dose of chloralamid should be repeated, followed by a light diet consisting of easily-digested food, which should be taken at frequent intervals, even though not inclined to eat. He should remain on deck as much as possible.

Dr. H. Rawlins states that seasickness can be relieved by elevating all the limbs. The object in doing this is to augment the blood-pressure, and thus diminish the anemia of the nerve centers due to the enfeeblement of cardiac action when in the nauseated state.

T. Lauder Brunton recommends wearing a tight bandage around the waist extending from the ensiform cartilage to the umbilicus or lower. Rockwell states that large doses of the bromids must be taken, beginning three days before the voyage. As much as thirty grains three times a day may be sufficient, but in some cases still larger doses are necessary. He prefers *the sodium to* the potassium salt. The late Dr. Beard, of New York, has written an interesting article on this subject, which has been published in book form.

Treatment of Smokers' Gingivitis.

R.	Salol	gr. xv	1
	Tinct. catechu	ʒi	4
	Spts. menthæ pip	℥iv	128

M. Sig.: One teaspoonful in half a glass of water as a mouth wash. —*Indian Med. Jour.*

Treatment of Furuncles.

℞.	Ichthyol		
	Etheris sulph.		
	Alcoholis—50 per cent—ãã	ʒiv	16

M. Sig.: Apply locally after shaving the part, and repeat in order to form layers of ichthyol over the part.

Treatment of La Grippe.

Dr. W. H. Thomson, in *Med. News*, states that for the relief of the general aching and pains in the bones aconite is the best drug. This modifies the state of congestion in the capillaries and quiets the heart. Next to aconite Dover's powder gives most relief. He recommends the following combination:

℞.	Ext. aconite—solid	gr. i-vi	06-36
	Pulv. ipecac. et opii	gr. i	06
	Phenacetini	gr. viii	5
	Quininæ sulphatis	gr. vi	36

M. Ft. pilulæ No. ii. Sig.: Take six such pills the first day and each succeeding day until the fever subsides; then three a day until the catarrhal symptoms have disappeared.

We wish to call the practitioner's attention to the very large dose of aconite in the above pill, ranging as it does from grain one-half to three grains in each pill. The usual dose is from gr. ¼ to ½.

Nasal Obstruction in the Newborn.

Chauveau, in *Gaz. Hebd. de Méd. et de Chir.*, states that eczematous impetigo may, by its secretions, occlude the nares of a newborn infant. An acute coryza may be responsible for the obstruction. For the latter condition he advises three or four drops of the following solution to be introduced into the nose three or four times daily:

℞.	Resorcin	gr. xv	1
	Ol. vaselini	℥iss	48

M. Sig.: Introduce three or four drops into the nares three or four times daily; or

℞.	Sodii biboratis	ʒiss	6
	Glycerini	℥i	32

M. Sig.: Drop two or three drops into the nares three times a day.

Vomiting of Pregnancy.

Baer recommends the following combination in vomiting of pregnancy:

℞.	Bismuthi subnitratis	ʒii	8
	Pepsini sacchari	ʒi	4
	Sodii bicarb.	ʒss	2
	Sacch. lactis	ʒi	4

M. ft. chart. No. xii. Sig.: One powder every three hours.

In addition he advises the following:

℞.	Acidi nitro-hydrochlor dil.	ʒiss	6
	Spts. limonis	ʒi	4
	Syr. simplicis	℥ii	64

M. Sig.: One teaspoonful in a wine glass of ice water three times a day.

Removal of Cerumen from the Ear.

Dr. Godart, as published in the *Phil. Med. Jour.*, recommends the following to remove wax from the ear:

℞.	Sodii carb.—pure	gr. xv	1
	Glycerini		
	Aq. destil. ãã	ʒv	20

M. Insert a few drops into the ear several times a day, followed by irrigation with water at proper temperature,

Infection of the Breast During Lactation.

C. S. Bacon, in *N. Y. Med. Jour.*, states that when the nipple wounds become infected, but before there are any symptoms of general infection or involvement of the deeper breast, the local wounds may be treated by the application of cotton saturated with alcohol. Nursing through a shield may be allowed.

When the symptoms of deeper infection appear, nursing from the affected breast should not be allowed and the breast should be supported and put at rest by a bandage. By following this plan of treatment 80 to 90 per cent. of all breast infections will terminate without abscess. If in spite of this treatment some temperature continues or reappears, the presence of pus must be expected and the breast opened.

To Relieve the Itching of Urticaria.

℞.	Alcoholis		
	Spts. etheris		
	Spts chloroformi, ãã	ʒviiss	30
	Menthol	gr. ii	12

M. Sig.: Use as a local application.

Iodin in Liver Spots.

Dr. M. Porasz, as noted in *Merck's Archives*, states that the best means of removing pityriasis versicolor, or liver spots, is tinctura iodi. In from three to four days after painting the spots with this preparation the skin begins to desquamate, which process is completed in four or five days. The separated epidermis takes along with it the spores and mycelia of the parasitic fungus.

Treatment of Seborrhea with Benzene.

Leftwich, in *Brit. Med. Journal*, states that the treatment of seborrhea sicca with alkalies or with bland oils for the removal of the crusts has not been satisfactory. As the crusts are made up chiefly of fat, he states that benzene makes a good solvent by *applying* it with a shaving brush over the affected area; the *thick crusts soon disappear.* The benzene leaves the scalp very dry, and he advises the cleansing to be followed by an inunction. For this he prescribes:

℞.	*Ol. ricini*		
	Spts. myrciæ, ãã	℥iss	48
	Tinct. cantharidis	ʒii	8
	Eau de Cologne	ʒiv	16

M. Sig.: Apply to the part every morning and repeat the benzene treatment once in five days.

The effect of the benzene on the baldness is also very satisfactory. To conceal the odor the author advises the addition of ten drops of oil of *geranium* to each ounce of benzene. In mild cases of seborrhea the benzene is mixed with equal parts of alcohol.

Treatment of Tonsillitis.

Dr. Cheveller, in *Klin. Ther. Woch.*, states that he treats all kinds of tonsillitis with the following gargle:

℞.	Sodii salicylatis	ʒii	8
	Aq. menth. pip. q. s. ad	℥vi	192

M. Sig.: Use as a gargle several times a day.

Treatment of Acne of the Face.

In mild cases of acne, Dr. A. Phillopson recommends the following:

℞.	Acidi acetici		
	Tinct. benzoin		
	Spts. camphoræ, ãã	m. xlv	3
	Alcoholis, q. s. ad	℥iiiss	112

M. Sig.: Put on some cotton and rub the face night and morning.

morality and vice. This opposition would come from the best classes in the community, from the members of churches. The constitution of this state says that the right of trial by jury, as heretofore enjoyed, shall remain inviolate, and that no man shall be deprived of his life, liberty or property except by due process of law. A case was cited by the speaker. If a man, in the most virulent and dangerous stage of smallpox, should walk down Clark Street, there is no power in Illinois by which that man can be taken and carried forcibly to a place where he can be isolated. No law will authorize this. Many years ago he examined the public health laws of England, and stated that their method of treating venereal diseases is more by persuasion than by force. A person afflicted with a venereal or contagious disease is persuaded to enter a hospital for treatment, and the British law contains no provision whereby a person suffering from smallpox, for instance, can be taken by force to a hospital for treatment. A person may be fined for spreading contagion; he may be imprisoned if the fine is not paid, but he considers this of no value whatever. The person must be taken at the right time by a summary process. He said that we are more particular in this state in all matters affecting the liberty of the citizen than any state in the Union, and this has been the tendency of the Illinois Supreme Court, therefore, anything physicians might do toward securing legislative enactment for the control of venereal diseases would have to be done very carefully and conservatively. Chicago could not pass an ordinance that would be efficacious. Power has not been granted the city as yet by the state, and it would be necessary to have legislation on this subject by the general assembly. He feels that something should be done toward legislative enactment for the control of venereal diseases, and he believes a move on the legislature of the state, with such a body as the medical profession back of it, would be a great educational force which would lead to the dissemination of information on these subjects and would eventually bring about some good. But any measures for the control of the venereal diseases would have to be handled in a conservative manner, and they would have to be very judicious to meet with the approval of the solons at Springfield.

Dr. L. Blake Baldwin said that one public-spirited citizen had already spent more than $3000 toward a hospital for the treatment of venereal diseases, and that this hospital was established last June, since which time the speaker has filled over 1600 prescriptions for gonorrhea and syphilis. He has at present in the institution forty patients suffering from either gonorrhea or syphilis, or both.

Dr. John M. Dodson firmly believes that the time has come when the medical profession should take more active measures to extend the knowledge which it has acquired in recent years in regard to the prevention of diseases, and of public hygiene in a general way. He suggested that the profession, through its organized societies and medical colleges, especially those connected with institutions of general learning, should institute extension courses, so that a series of lectures, carefully prepared and illustrated properly, may be given to the various members of social clubs and other organizations. He believes, through the medium of such organizations and institutions, that lectures on sexual physiology and anatomy, also on the venereal diseases, their dreadful consequences and proper mode of prevention, would do a great deal of good in this city, if wisely conducted.

Dr. Denslow Lewis expressed satisfaction that this symposium had been held. He referred to instances where mawkish sentimentality had prevented a free discussion of these important matters even in professional circles. He condemned illiberal criticism of honest efforts to benefit humanity by calling attention to the truth. He favored a thorough investigation of all matters pertaining to sex relationship and venereal diseases, and a diffusion of knowledge of these subjects. He urged the consistent study of infection as occurs when other infectious diseases are considered. The education of the child in sexual matters is of great importance, and can scarcely begin too early. Young boys should appreciate the dignity of virility. They should understand that when they grow up to be men, under suitable restrictions of civilization, religion and education, they may hope to be privileged to indulge the sexual function as their fathers have done before them, for the perpetuation of the species. They should be taught that nothing in their youth should debase them or interfere with the performance of this function at the proper time under suitable conditions. They should be taught also that young women are under their protection; that under proper restrictions these young women will become mothers, and for that reason nothing should be done to them which will debase them or interfere with the proper performance of their functions. They should be taught regarding the venereal diseases in detail; they should know that gonorrhea is not a simple disease, as ordinarily understood, and that syphilis may last for years, affecting the nervous system when all outward manifestations of the disease have disappeared. These matters are of the greatest importance in diminishing the ravages of the venereal diseases. They can only become known by proper instruction by competent medical men. Furthermore, among married people these matters should receive attention. He believes that in many instances venereal diseases are contracted because the sexual relations between husband and wife are unsatisfactory. He thinks it is the duty of physicians to instruct the men and women of their clientele regarding the details of the sexual act. He believes it to be the part of wisdom for physicians to speak out frankly and honestly to patients in that regard, for, oftentimes, even the integrity of the home is threatened when the sexual relations between husband and wife are not mutually agreeable.

The subject was further discussed by Drs. Charles S. Bacon, Hugh T. Patrick and L. Harrison Mettler.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. *Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.*]

Seasickness.

Memphis, Tenn., Feb. 27, 1901.

To the Editor:—Will you give a short statement of the causes, symptoms and best mode of treatment of seasickness? In causes, I mean the pathology, if any is known. And kindly refer me to some text-book where I can find something about seasickness. Subscriber.

Ans.—The pathology undoubtedly lies in the disturbances of the cerebral circulation, producing anemia of that organ. The symptoms are nausea and vomiting of the severest type, accompanied by great mental depression.

Dr. Daniel R. Brower recommends for such patients the following outline of treatment: Avoid excessive fatigue and mental worry for several days previous to sailing; proper attention must be given the gastro-intestinal tract by taking a light diet and producing free catharsis by means of a full dose of massa hydrargyri, followed at the proper time by a saline purgative. This treatment should be carried out two or three days before going on board ship. As soon as there has been a thorough evacuation one teaspoonful of the following should be taken three times a day until time to go aboard:

℞. Potassii bromidi ....ʒv 20|
Aq. menthæ piperitæ q. s. ad............℥ii 64|

M. Sig.: One teaspoonful in water three times a day.

As soon as the patient arrives on board ship he should take a dose of chloralamid (gr. x-xv, 0.66-1), lie down and remain in a horizontal position until at sea and when the effects of the medicine have worn off, he should move around on deck to ascertain whether he has obtained his "sea legs," to use the nautical expression. If he finds that he is still inclined to be seasick the dose of chloralamid should be repeated, followed by a light diet consisting of easily-digested food, which should be taken at frequent intervals, even though not inclined to eat. He should remain on deck as much as possible.

Dr. H. Rawlins states that seasickness can be relieved by elevating all the limbs. The object in doing this is to augment the blood-pressure, and thus diminish the anemia of the nerve centers due to the enfeeblement of cardiac action when in the nauseated state.

T. Lauder Brunton recommends wearing a tight bandage around the waist extending from the ensiform cartilage to the umbilicus or lower. Rockwell states that large doses of the bromids must be taken, beginning three days before the voyage. As much as thirty grains three times a day may be sufficient, but in some cases still larger doses are necessary. He prefers the sodium to the potassium salt. The late Dr. Beard, of New York, has written an interesting article on this subject, which has been published in book form.

Treatment of Smokers' Gingivitis.

R.	Salol	gr. xv	1
	Tinct. catechu	ʒi	4
	Spts. menthæ pip	℥iv	128

M. Sig.: One teaspoonful in half a glass of water as a mouth wash. —*Indian Med. Jour.*

Treatment of Furuncles.

℞.	Ichthyol		
	Etheris sulph.		
	Alcoholis—50 per cent—āā	ʒiv	16

M. Sig.: Apply locally after shaving the part, and repeat in order to form layers of ichthyol over the part.

Treatment of La Grippe.

Dr. W. H. Thomson, in *Med. News*, states that for the relief of the general aching and pains in the bones aconite is the best drug. This modifies the state of congestion in the capillaries and quiets the heart. Next to aconite Dover's powder gives most relief. He recommends the following combination:

℞.	Ext. aconite—solid	gr. i-vi	06-36
	Pulv. ipecac. et opii	gr. i	06
	Phenacetini	gr. viii	5
	Quininæ sulphatis	gr. vi	36

M. Ft. pilulæ No. ii. Sig.: Take six such pills the first day and each succeeding day until the fever subsides; then three a day until the catarrhal symptoms have disappeared.

We wish to call the practitioner's attention to the very large dose of aconite in the above pill, ranging as it does from grain one-half to three grains in each pill. The usual dose is from gr. ¼ to ½.

Nasal Obstruction in the Newborn.

Chauveau, in *Gaz. Hebd. de Méd. et de Chir.*, states that eczematous impetigo may, by its secretions, occlude the nares of a newborn infant. An acute coryza may be responsible for the obstruction. For the latter condition he advises three or four drops of the following solution to be introduced into the nose three or four times daily:

℞.	Resorcin	gr. xv	1
	Ol. vaselini	℥iss	48

M. Sig.: Introduce three or four drops into the nares three or four times daily; or

℞.	Sodii biboratis	ʒiss	6
	Glycerini	℥i	32

M. Sig.: Drop two or three drops into the nares *three times* a day.

Vomiting of Pregnancy.

Baer recommends the following combination in vomiting of pregnancy:

℞.	Bismuthi subnitratis	ʒii	8
	Pepsini sacchari	ʒi	4
	Sodii bicarb.	ʒss	2
	Sacch. lactis	ʒi	4

M. ft. chart. No. xii. Sig.: One powder every three hours.

In addition he advises the following:

℞.	Acidi nitro-hydrochlor dil.	ʒiss	6
	Spts. limonis	ʒi	4
	Syr. simplicis	℥ii	64

M. Sig.: One teaspoonful in a wine glass of ice water three times a day.

Removal of Cerumen from the Ear.

Dr. Godart, as published in the *Phil. Med. Jour.*, recommends the following to remove wax from the ear:

R.	Sodii carb.—pure	gr. xv	1
	Glycerini		
	Aq. destil. āā	ʒv	20

M. Insert a few drops into the ear several times a day, followed by irrigation with water at proper temperature,

Infection of the Breast During Lactation.

C. S. Bacon, in *N. Y. Med. Jour.*, states that when the nipple wounds become infected, but before there are any symptoms of general infection or involvement of the deeper breast, the local wounds may be treated by the application of cotton saturated with alcohol. Nursing through a shield may be allowed.

When the symptoms of deeper infection appear, nursing from the affected breast should not be allowed and the breast should be supported and put at rest by a bandage. By following this plan of treatment 80 to 90 per cent. of all breast infections will terminate without abscess. If in spite of this treatment some temperature continues or reappears, the presence of pus must be expected and the breast opened.

To Relieve the Itching of Urticaria.

R.	Alcoholis		
	Spts. etheris		
	Spts chloroformi, āā	ʒviiss	30
	Menthol	gr. ii	12

M. Sig.: Use as a local application.

Iodin in Liver Spots.

Dr. M. Porasz, as noted in *Merck's Archives*, states that the best means of removing pityriasis versicolor, or liver spots, is tinctura iodi. In from three to four days after painting the spots with this preparation the skin begins to desquamate, which process is completed in four or five days. The separated epidermis takes along with it the spores and mycelia of the parasitic fungus.

Treatment of Seborrhea with Benzene.

Leftwich, in *Brit. Med. Journal*, states that the treatment of seborrhea sicca with *alkalies or* with bland oils for the removal of the crusts has *not been satisfactory*. As the crusts are made up *chiefly of fat*, he states that benzene makes a good solvent by applying it with a shaving brush over the affected area; the thick crusts soon disappear. The benzene leaves the scalp very dry, and he advises the cleansing to be followed by an inunction. For this he prescribes:

℞.	Ol. ricini		
	Spts. myrciæ, āā	℥iss	48
	Tinct. cantharidis	ʒii	8
	Eau de Cologne	ʒiv	16

M. Sig.: Apply to the part every morning and repeat the benzene treatment once in five days.

The effect of the benzene on the baldness is also very satisfactory. To conceal the odor the author advises the addition of ten drops of oil of geranium to each ounce of benzene. In mild cases of seborrhea the benzene is mixed with equal parts of alcohol.

Treatment of Tonsillitis.

Dr. Cheveller, in *Klin. Ther. Woch.*, states that he treats all kinds of tonsillitis with the following gargle:

℞.	Sodii salicylatis	ʒii	8
	Aq. menth. pip. q. s. ad	℥vi	192

M. Sig.: Use as a gargle several times a day.

Treatment of Acne of the Face.

In mild cases of acne, Dr. A. Phillopson recommends the following:

℞.	Acidi acetici		
	Tinct. benzoin		
	Spts. camphoræ, āā	m. xlv	3
	Alcoholis, q. s. ad	℥iiiss	112

M. Sig.: Put on some *cotton* and rub the face night and morning.

Pertussis.

Dr. Roth has treated a great number of cases of whooping cough, with the following combination containing iodin and carbolic acid, with splendid results:

℞.	Acidi carbol.	gr. xv	1	
	Spts. vini gallici	ʒss	2	
	Tinct. iodi	m. x		66
	Tinct. belladonnæ	ʒss	2	
	Aq. menth. pip	℥iii	96	
	Syrupi opii	ʒiiss	10	

M. Sig.: A teaspoonful every two hours to a child over two years of age. —*Med. Summary.*

It will be seen, if Dr. Roth is quoted correctly, that the child would be taking one-half grain of carbolic acid every two hours, or twelve grains in twenty-four hours, which is a poisonous dose.

Treatment of Sore Nipples.

℞.	Balsami peruviani		
	Tinct. arnicæ, ãã	ʒss	2
	Ol. amygdal. dulcis		
	Aq. calcis ãã	℥ss	16

M. Sig.: Shake well and apply to the nipple with a camel's hair brush. —*Med. Summary.*

Medicolegal.

Sufficiency of Basis for Non-expert Opinion of Sanity.—The Supreme Court of Iowa states, in the will case of Betts vs. Betts, that there is some authority for saying that it is not within the province of the court to pass upon the sufficiency of the information upon which a non-expert witness rests his opinion of a person's mental condition; that this is a matter for the jury. But, without indorsing this doctrine, it states that it has to say that no general rule can be laid down as to what opportunity for observation will be sufficient. Courts, it adds, should be slow to make any hard and fast rule, for all the facts out of which the opinion grows are given the jury.

Presumption of Accidental Death.—In the absence of evidence to that effect, the Supreme Court of California holds, in the case of Jenkin vs. the Pacific Mutual Life Insurance Company, that it will not be presumed that an insured person, who died from a gunshot wound, purposely took his own life, nor that he was murdered, but that his death must be attributed to accidental causes. That the courts will presume that the death was the result of an accident, when nothing more is shown than that it was brought about by a violent injury, and the character of such injury is consistent with the theory of accident, it declares, seems to be a rule upheld by the great weight of authority.

"Self-Destruction" Under Life Insurance Policy.—The United States Circuit Court of Appeals, Fifth Circuit, holds, in Union Mutual Life Insurance Company vs. Payne, that "self-destruction," as used in a contract of insurance stating that it, sane or insane, is a risk not assumed by the company, means suicide, and does not include accidental self-killing. In other words, accidental or unintentional self-killing does not forfeit a policy for suicide. Moreover, the court holds that a statement in the proof of death that the insured committed suicide is not conclusive of that fact against the person making it, and does not relieve of the burden of proof the company setting up suicide as a defense, although it is admissible as evidence of suicide, and, in the absence of explanation or contradiction, might be quite sufficient evidence thereof.

Presumption of Miscarriage from Accident.—The Appellate Court of Illinois, first district, holds, in Strehmann vs. the City of Chicago, that the fact of a miscarriage in two months after an accident, coupled with the evidence of the woman's physician that the accident, as described by her, might have caused the miscarriage, and no other cause having been proved, it would be a reasonable inference that the accident caused the miscarriage. Certainly, it says, it would be a question for the jury, on all the evidence, whether the accident was the efficient cause of the miscarriage. And it holds that it was calculated to mislead the jury for the trial court by an instruction to single out one fact in evidence, namely, the birth of the still-born child, not stating other facts in evidence, and inform the jury that such fact considered alone did not tend to prove that the accident was the proximate cause of it.

Can Not Dispose of Dead Body by Will.—The Supreme Court of California says, in the case of Enos vs. Snyder, that the general English and American authorities are not very satisfactory bearing on the contest where next of kin, on the one hand, and claimants under a will, on the other hand, demand possession of a body for the purpose of burying it. However, it considers it quite well established by those authorities that, in the absence of statutory provisions, there is no property in a dead body; that it is not part of the estate of the deceased person; and that a man can not by will dispose of that which after his death will be his corpse. Between next of kin and an executor or administrator as such, it holds that the custody of the corpse and the right of burial belong to the former, and says that it has been generally declared in the American cases, that the right of burial of a deceased wife or husband belongs to the surviving spouse, and in other cases to the next of kin, being present and having the ability to perform the service.

City Not Liable for Damages in Enforcing Quarantine.—The Supreme Court of Texas concurs, in what is now entitled the case of White vs. the City of San Antonio, with the Court of Civil Appeals of Texas, in holding that an action did not lie against the city for the wrongs complained of, as stated on page 1175 of The Journal of Nov. 3, 1900. This was an action brought to recover of the city for the acts of its mayor and health officer in taking possession of the plaintiff's hotel and placing and detaining therein certain persons suspected of having been exposed to the infection of yellow fever. The supreme court says that the enforcement of quarantine regulations and the establishment and maintenance of pest houses are matters of vital interest to the public in general, and are peculiarly a public function, and therefore, when devolved upon a city, are most generally held to belong to that class of duties for which a city is not answerable, when, through the negligence or misconduct of its officers in their performance, damages are inflicted. The rule, it adds, is recognized by the leading text writers, and is maintained by courts of the highest authority. Moreover, it considers that the provisions of the Texas statutes which make the health officers of a city officers of the state, show that their functions are governmental, and are conferred in the interest of the public at large, so that this rule clearly applies to their acts.

Injuries in Consequence of Effect of Intoxicants.—The Court of Appeals of Kentucky states one of the exceptions from the insurance contracted for in the case of Campbell vs. the Fidelity and Casualty Company of New York to have been of injuries, fatal or otherwise, received in consequence of having been under the influence of or affected by intoxicants. And it says that there seems to be a dearth of direct authority upon the question of what injuries may properly be said to have been received in consequence of having been under the influence of or affected by intoxicants. This clearly, it holds, does not include injuries such as disease resulting from the direct or indirect effect upon the system of the intoxicants. But it thinks that this language applies to injuries received in consequence of the effect of intoxicants upon the nerves, the mind, or the disposition of the insured. For example, it applies where a man's nerves are so unsteady from the use of intoxicants that he loses his balance upon the edge of a precipice, and falls; where his mind is so affected by their use that he does not see a present danger, but deliberately walks into it; or where his passions are so excited, and his temper so warped, that he recklessly does acts in themselves dangerous, or which naturally tend to produce dangerous results from others. Under this view, it follows that it is not necessary, in order to come within this exception of the policy, that the insured should be so far under the influence of intoxicants as to be in what is ordinarily termed a state of intoxication or drunkenness, but only so far under the influence of or affected by them that incapacity, nervous or mental, or the excitement of passion, should be such that injury results in consequence of it.

Damages for Miscarriage from Assault.—The Supreme Court of Minnesota holds, in the case of Plonty vs. Murphy, that, on the trial of a civil action for the recovery of damages for an alleged assault on a woman pregnant with child, an alleged result being a miscarriage, it is not necessary, in order for the plaintiff to recover substantial damages for this particular injury, that she show by testimony that she suffered more pain, or increased illness, or greater impairment of health, than she would if the delivery of the child had been at the proper time and in the natural way. Here the defendant unjustifiably intruded himself upon the plaintiff by entering the kitchen in which she was at work, remained about ten minutes, talking in an excited and angry manner, shook his first at her when within striking distance, and raised his hand as if he would strike her. This conduct excited her fear, she did not sleep that night, had bearing-down pains next morning, commenced to flow within three days, and eight days afterward was delivered of a six-months' child, which, if living at the time of delivery, expired immediately afterward. The medical testimony adduced at the trial was to the effect that the affair, as related by the plaintiff, could not possibly cause a shock sufficient to produce a miscarriage. But the supreme court says that the jurors were not bound to accept this medical testimony as conclusive, it being wholly based on hypothetical questions, and open to the criticism which can properly be made as to all testimony of this nature. And it holds that not only was the evidence in the case sufficient to support a finding of the jury, in effect, that the defendant committed an assault on the plaintiff, but that, notwithstanding the expert testimony referred to, there was evidence from which the jury could find that the assault was the approximate cause of the miscarriage. It also holds that, in view of this fact, a verdict for $300 was not excessive.

What May Amount to Administering a Drug.—A section of the Indiana statutes provides that, whoever prescribes or administers to any pregnant woman, or to any woman he supposes to be pregnant, any drug, medicine, or substance whatever, with intent thereby to procure the miscarriage of such woman, shall, if the woman miscarries and dies in consequence thereof, be fined, etc. The word "administer" in said section, the Supreme Court of Indiana holds, in McCaughey vs. State, does not signify merely the manual administering of the drug, medicine, or substance, but it has a much wider meaning. Among the definitions of the word are the following: "To furnish; to give; to administer medicine; to direct or cause it to be taken." Webst. Dict. "To supply, furnish, or provide with." Stand. Dict. As used in said section, the word "administer," the court holds, was clearly intended to cover the whole ground named, making it an offense to give, furnish, supply, provide with, or cause to be given, furnished, supplied or provided with, or taken, any such drug, medicine, or substance, with the intent and either result named in said section. And the word, the court holds, embraces, and was intended to embrace, every mode of giving, furnishing, supplying, providing with, or causing to be taken any such drug, medicine, or substance. This it pronounces both the letter and spirit of the section. Moreover, as the section makes it a crime to either prescribe or administer such drug, medicine, or substance with the intent and result named therein, the court holds it immaterial in this case whether the woman knew of the properties of the drug and the purposes for which it was used, or whether she requested the accused to procure the drug for her, or he furnished it to her without such request, or whether she decided to take it before he procured and gave it to her. If he knew or supposed she was pregnant, and knew the purpose for which she desired the drug, and furnished it to her, and she afterwards, when he was not present, took the same, he administered the drug to her, the court holds, in the meaning of the section.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, March 2.

1 *Three Dangerous Operations. John B. Deaver.
2 On the Desirability of Combined Operations in Pelvic and Abdominal Surgery. W. P. Manton.
3 *Urinary Hyperacidity. Thomas R. Brown.
4 *Multiple Brain Abscess Following Empyema. Thomas A. Claytor.
5 *The Use of the Aqueous Extract of the Suprarenal Gland in Persistent Epistaxis. Lewis S. Somers.
6 *The Bio-chemical Basis of Pathology. Henry A. Bunker.
7 Cultivation of the Aspergillus in Urine. L. Napoleon Boston.
8 *A New Blood-stain. Randle C. Rosenberger.

Boston Medical and Surgical Journal, February 28.

9 *The Use and Abuse of Spectacles. Hasket Derby.
10 Avulsion of the Finger, With a Case in Which This Accident Occurred to an Infant Twenty Months Old. George H. Monks.
11 Two Cases of Ligature of the Internal Jugular Vein for Infective Thrombosis of the Sigmoid Sinus Due to Purulent Otitis Media; One Recovery and One Death. Frederick L. Jack.

Medical News (N. Y.), March 2.

12 *Veratrum Viride; Its Value in Some Conditions of Toxemia. A. B. Isham.
13 *The Treatment of Delirium Tremens by the Intravenous Infusion of Saline Solution. James P. Warbasse.
14 *Yohimbin and Its Salts; a New Aphrodisiac. Roberts Bartholow.
15 *Thymotal; A New Remedy for Ankylostomiasis. J. E. Pool.
16 Belladonna vs. Scopolia. Reynold Webb Wilcox.
17 Immunization for Typhoid Fever: A Review. H. W. McLaughlin.
18 Malarial Fever With Special Reference to the Value of Blood Examinations. Report of Cases. Herbert Old.
19 Is Rubeola Infection Antagonistic to Pertussis Infection? William Byrd Young.
20 Complete Transposition of the Viscera. George W. Webster.

New York Medical Journal, March 2.

21 *The Axis-Traction Forceps, With Special Reference to Rotary Axis Traction in the Treatment of Posterior Positions of the Anatomical Head. Simon Marx.
22 *Metrorrhagia Due to Inflammatory Processes Within the Pelvis. Edwin B. Cragin.
23 The Pathology of Intra-uterine Death. (Continued.) Neil MacPhatter.
24 *The Electrochemical Action of the X-rays in Tuberculosis. J. J. Rudis-Jicinsky.
25 *The Palliative Operative Treatment of Carcinoma of the Posterior Wall of the Stomach. Albert Vander Veer.
26 Hemorrhage from a Circumtonsillar Abscess. Walter F. Chappell.
27 The Non-Operative Treatment of Prostatic Hypertrophy, With Special Reference to Catheter Life. Ramon Guiteras.

Medical Record (N. Y.), March 2.

28 *The Treatment of Rheumatic and Allied Diseases of Joints Complicated by Deformity. Virgil P. Gibney.
29 *An Improved Method of Examining the Female Bladder, Admitting Intravesical Operations, and Treatment of the Ureters. William R. Pryor.
30 *Some Facts Regarding "Ureine." A. F. Chace and William J. Gies.
31 *A Method of Reducing Dislocations of the Thumb. John F. Erdmann.
32 *Tuberculosis in Prisons and Reformatories. S. A. Knopf.

Cincinnati Lancet-Clinic, March 2.

33 Appendicitis (Surgical Treatment). B. Merrill Ricketts.
34 Surgery of the Pericardium. Hal C. Wyman.
35 Looking Forward. Louis A. Molony.

St. Louis Medical Review, March 2.

36 A Plea for Early Operation in Ovaritis Followed by Epileptiform Attacks. W. Huston Ford.

Medical Age (Detroit, Mich.), February 25.

37 Complications and Sequelæ of Typhoid Fever. J. M. Krim.
38 Nasal Syphilis. M. C. Morris.
39 *Conservatism in Surgery. (Continued.) Maurice H. Richardson.
40 The Use of Cocain in Spinal Puncture. M. Shellenburg.

Pediatrics (N. Y.), February 15.

41 *Xeroderma Pigmentosum. Bernard Wolff.
42 1. Supraorbital Headache Due to Eye-strain. 2. Nasal Neurosis. Samuel G. Dabney.
43 Coxa Vara. Fielding L. Taylor.

The Post-Graduate (N. Y.), February.

44 Some Reflections Concerning Primary Sterility. Abram Brothers.
45 Successful Treatment of Some Acute and Chronic Joint Affections. William B. Snow.
46 Clinical Lecture. A. E. Davis.
47 The Treatment of Epilepsy—A Lecture. Joseph Collins.
48 Acute Purpura Hemorrhagica With Autopsy. F. W. Gavin.
49 Notes from the Clinics. Drs. De Garmo, Brown and Allen.

American Journal of Obstetrics (N. Y.), February.

50 *Cocainization of the Spinal Cord by Means of Lumbar Puncture During Labor. William R. Stone.
51 Fatal Case of Puerperal Fever Which Led to a Malpractice Suit. C. S. Bacon.
52 Cesarean Section on a Girl Thirteen Years Old. J. Clarence Webster.
53 Pregnancy and Delivery Complicated With Tumors and Neoplasms of the Genital Organs. Henry J. Kreutzmann.
54 *New Formation of the Female Urethra: With Report of a Case. Charles P. Noble.
55 A Device for the Relief of Bladder Spasm in the Treatment of Cystitis and Bladder Irritation. George H. Noble.
56 Dermoid and Other Cysts of the Ovary: Their Origin from the Wolffian Body. (To be continued.) Samuel W. Bandler.
57 Waters of Salsomaggiore and Their Therapeutic Action in the Diseases of Women. G. Emilio Curatulo.

Pennsylvania Medical Journal (Pittsburg), February.

58 Surgery of the Gall-Bladder. Otto C. Gaub.
59 Recent Advances in the Bacterial Treatment of Sewage. D. H. Bergey.
60 The Rôle of Insects in Transmission of Disease: a Résumé. Emma Osborn Cleaver.
61 Humanology or Higher Physiology. E. N. Ritter.
62 Sanitary Work for Children. B. H. Detwiler.
63 The Use and Abuse of the Forceps. W. Knowles Evans.
64 Nephritis Complicating Gynecologic Disease. George Erety Shoemaker.
65 Local Destruction and Regional Sterilization of Cancer by the Cataphoric Diffusion of the Electrolytic Salts of Mercury: a Further Report. G. Betton Massey.

Archives of Ophthalmology (New Rochelle, N. Y.), January.

66 *A Case of Recovery from an Affection of the Chiasm, With Remarks on the Location of the Optic Nerve Fibers in the Chiasm. Dr. Seggel.
67 Case of Interstitial Keratitis Cut Short by Attack of Measles. Herbert Harlan.
68 Two Cases of Steel in Eye: the First Removed by Magnet: Eye Saved, With Cataract Formation; the Second Remaining Quiet in the Background of a Healthy Eye. J. H. Delany.
69 Congenital Right-sided Anophthalmus With Left-sided Microphthalmus. L. D. Brose.
70 Ophthalmic Curiosities. 1. Proptosis by Gently Opening the Eye With the Fingers. 2. Healing of an Extensive Wound Through Cornea and Sclera. George Strawbridge.
71 Autopsy Report of a Case of Congenital Unilateral Anophthalmus. C. Zimmermann.
72 Two Cases of Ossification of Choroid. David Webster.
73 *On the Circulation and Diminution of Tension in Atrophic Eyes. G. Ischreyt.

Annals of Gynecology and Pediatry (Boston), February.

74 *A Consideration of the Different Operative Procedures in the Treatment of Retrodisplacements of the Uterus. O. Beverly Campbell.
75 *"Insanity in Women Associated With Pelvic Diseases." W. O. Henry.
76 Report of a Case of Acute Fatal Pemphigus. Jay F. Schamberg.
77 Fourteen Years' Work in Abdominal Surgery. F. F. Lawrence.
78 Gonorrhea in the Female. Alfred Roulet.
79 The Nature and Treatment of Neuralgic Dysmenorrhea. Eugene C. Underwood.
80 Hernia of the Bladder. Charles C. Allison.

Chicago Medical Recorder, February.

81 The Limitations of Clinical and Microscopical Evidence. W. K. Jaques.
82 Chronic Myocarditis and Fatty Degeneration of the Heart—Varieties and Etiology. Joseph M. Patton.
83 *The Pathology of Chronic Inflammations and Degenerations of the Myocardium. Arthur R. Edwards.
84 *Symptoms of Chronic Myocarditis and Fatty Degeneration of the Heart. William E. Quine.
85 Symptomatology of Angina Pectoris. Frank Billings.
86 Methods of Examination of the Heart. George W. Webster.
87 The Diagnosis of Myocarditis and Fatty Degeneration of the Heart. E. Fletcher Ingals.
88 Prognosis of Chronic Myocarditis and Fatty Heart. Robert B. Preble.
89 Treatment of Chronic Myocarditis. Robert H. Babcock.
90 The Symptomatology of Cardiac Neuroses. James B. Herrick.
91 The Diagnosis and Prognosis of Cardiac Neuroses. John A. Robison.
92 *The Neurology of Angina Pectoris. William T. Eckley.
93 *A Plea for Enterostomy in Acute Intestinal Obstruction. Emanuel J. Senn.
94 Sarcoma of the Pituitary Body. Carl D. Swenson.

Denver Medical Times, February.

95 Typhoid Fever Aborted. R. G. Woodworth.
96 The Use and Abuse of Glasses. T. A. Grigg.
97 Conservatism in Pelvic Suppuration. John O. Polak.
98 Principles of Asepsis Applied to Operative and Other Wounds of the Eye. Edward Jackson.
99 Observations on and Deductions and Generalizations from the Administration of About 1000 Anesthetics. A. A. Kerr.

Quarterly Journal of Inebriety (Hartford, Conn.), January.

100 Is Alcohol a Food or a Poison? Dr. Kassowitz.
101 *The Influence of Alcohol on Muscular Work. E. Destree.
102 *On the Action of Alcohol. G. Sims Woodhead.
103 "The Influence of Alcoholic Liquors on Mental Work." Dr. De Boeck.

Obstetrics (N. Y.), February.

104 Fifty-eight Cases of Puerperal Eclampsia Without Mortality. W. Stroganoff.
105 *Irreducible Incarcerated Retroflexed Gravid Uterus. William A. Quinn.
106 Case of Puerperal Eclampsia with Kidney Failure and Facial Paralysis. Ewing Marshall.
107 Vertex Presentation in the Fourth Position. Thomas S. Bullock.

Journal of Nervous and Mental Diseases (N. Y.), February.

108 A Case of Cortical Sclerosis, Hemiplegia and Epilepsy, With Autopsy. Charles L. Dana.
109 *Diffuse Degeneration of the Spinal Cord. (Continued.) James J. Putnam and E. W. Taylor.

Woman's Medical Journal (Toledo, Ohio), January.

110 The Normal Placenta. Boose Tucker.
111 Smallpox. (Continued.) Ellen H. Heise.

New England Medical Monthly (Danbury, Conn.), February.

112 General Considerations Relative to the Etiology, Pathology and Treatment of Neurasthenia. A. D. Rockwell.
113 Some General Causes of Inebriety. T. D. Crothers.
114 The Principles of Diagnosis of Lesions of the Brain. John Punton.
115 Notes on Fractures of the Major Bone Shafts Contiguous With or Involving the Articulations. Thomas H. Manley.
116 Asthma and Its Treatment. A. E. May.
117 Rectitis: Operation Advised and Refused: Blood Cured. T. J. Biggs.
118 Lyptol in Minor Surgery. L. J. Pritchard.

Medical Times and Register (Philadelphia), February.

119 Local Anesthesia in Hemorrhoidal Operations and All Varieties of Minor Surgical Work. O. W. Green.
120 Exclusion of the Intestine. E. Terrier and A. Gossel. Management of Cancer of the Large Intestine. R. De Bovis.
121 Aspirin. E. W. Bing.

Canadian Journal of Medicine and Surgery (Toronto), March.

122 Cerebrospinal Meningitis. Alexander McPhedran.
123 Report of a Case of Forcible Reduction of the Deformity of Pott's Disease. H. P. H. Galloway.
124 Annual Address of Chairman of Provincial Board of Health. Harry E. Vaux.
125 *The Morbid Anatomy and Pathology of Hematemesis and the Surgical Treatment of Hemorrhage from Gastric and Duodenal Ulcers. G. E. Armstrong.

Journal of Medicine and Science (Portland, Me.), February.

126 State Laboratories as Aids to Sanitary Work. Samuel W. Abbott.
127 The Management of Occiput Posterior Positions. Stanley P. Warren.

Hot Springs Medical Journal, January.

128 *What Is Normal Menstruation? George J. Engelmann.
129 *An Operation for the Treatment of Marked Rectal Prolapse in Women. J. Wesley Bovee.

Physician and Surgeon (Detroit and Ann Arbor, Mich.), January.

130 Tuberculosis of the Knee-Joint and Other Cases in Orthopedic Surgery. Daniel W. Marston.
131 Obstruction of the Bowels. Theodore A. McGraw.
132 Neuralgia of the Fifth Nerve. Robert McGregor.
133 *Pathology and the Antiseptic Treatment of Smallpox. Alonzo Bryan.
134 Shortening of the Round Ligaments as a Conservative Element in Pelvic Surgery. Howard W. Longyear.

Kansas City Medical Record, February.

135 Discussion of the Treatment of Diphtheria. Charles H. Lester.
136 The Treatment of Puerperal Convulsions. J. W. P. Smithwick.
137 Brain Diseases. E. E. Gilmore.

Fort Wayne Medical Journal-Magazine, December, 1900.

138 *X-Rays. B. W. Rhamy.
139 Neuralgia. Frank M. Greenwell.

St. Louis Courier of Medicine, February.

140 *Influenza in Infants. John Zahorsky.
141 The Theory and Therapy of Typhoid Fever: With Special Reference to the Modern Antiseptic Treatment. Charles Franklin Hope.
142 Upon Certain Fractures. Norvelle Wallace Sharpe.

Therapeutic Gazette (Detroit, Mich.), February 15.

143 The Treatment of Carcinoma of the Lower Lip. John Chambers Da Costa.
144 The Treatment of Chronic Suppurative Inflammation of the Middle Ear. S. MacCuen Smith.
145 The Value of Continuous Catheterization in Some Genito-Urinary Affections. H. M. Christian.
146 The Management of Nasal Catarrh. Charles Prevost Grayson.
147 Formaldehyde. A. A. Young.
148 A Note on the Treatment of Cirrhosis of the Liver. F. J. Bowles.

Medical Herald (St. Joseph, Mo.), February.

149 Report of a Few Surgical Cases. H. Hapeman.
150 Hints on the Treatment of Bronchial and Pulmonary Affections. Henry S. Fendler.

Southern Medical Journal (La Grange, N. C.), February.

151 Specific Urethritis. H. I. Bass.
152 Comparative Value of Laboratory and Bedside Diagnosis. (Concluded.) E. C. Levy.
153 Suppression of the Urine as a Complication in Dysentery. Joel Crawford.
154 Clinical Aspect and Treatment of La Grippe. J. W. P. Smithwick.
155 The Comparative Value of External Applications in the Treatment of Acute Pulmonary Disease. J. W. P. Smithwick.

Texas Medical Journal (Austin), February.

156 A Report of Four Surgical Cases. Nephrectomy, Hysterectomy, Etc. Henry K. Leake.
157 Indigestion. C. F. Ulrich.

Texas Medical Gazette (Fort Worth), February.

158 The Care of the Insane in Our State Institutions. Robert. B. Sellers.
159 Foreign Body in the Brain. Frank R. Ross.
160 Early Diagnosis and Treatment of Cancer of the Cervix. F. D. Thompson.
161 A Rare Case of Tubal Pregnancy. U. H. Nixon.
162 The Necessity of Coercive Measures in Suppressing Smallpox Epidemics. H. C. Whitehead.
163 A Case of Orbital Cellulitis. Drs. Gray and Thompson.

Medical Standard (Chicago), February.

164 Advantages of Sanitarium Treatment. George F. Butler.
165 European Health Resorts and Sanitariums. David Paulson.
166 Private Institutions for Mental Diseases. Frank Parsons Norbury.
167 The Loomis Sanitarium. J. Edward Stubbert.
168 Sanitarium Treatment of Drug Habits. T. D. Crothers.
169 Craig Colony for Epileptics. Wm. P. Spratling.
170 Hot Springs as a Health Resort. James T. Jelks.
171 A Phase of Hospital Treatment of the Insane. Wm. G. Stearns.
172 The Work of a Health Board. J. N. Hurty.
173 Treatment of Pneumonia. Wm. F. Waugh.
174 Treatment of Syphilis. G. Frank Lydston.
175 Typhoid Fever; Its Complications and Sequelæ. J. T. Moore.
176 Treatment of Syphilis. Wm. S. Gottheil.

AMERICAN.

1. **Dangerous Operations.**—Deaver's paper is a protest against the indiscriminate use and abuse of three operations, excellent procedures in themselves if properly and justly employed. These are repair of the cervix, curettement, and rapid dilatation of the cervix. What he insists upon particularly is antiseptic preparation of the field of operation, including shaving, use of soap and water, permanganate of potash, oxalic acid, bichlorid of mercury and carbolic acid solutions, with iodoform gauze. These rules of antiseptic detail must be followed. He is a firm believer in rubber gloves, which not only protect the patient, but also the surgeon. We can not boil the hands, but we can boil the gloves, and it is easy to change them in changing operations and thus insure asepticity. He also warns against operations on the cervix or its canal in the presence of a latent or active inflammation, or adhesions binding down the uterus.

3. **Urinary Hyperacidity.**—The fact that certain symptoms of bladder irritation are some times observed without any vesical infection, is noticed by Brown, who finds the cause for some of these rather mysterious cases in an extreme hyperacidity of the urine, which is often itself increased by the increased irritability of the bladder; this hyperacidity being itself attributable to general neurotic, neurasthenic and hysterical conditions or, in other words, it is a vesical neurosis. Nine cases are reported of this condition, relieved by treatment.

4. **Multiple Brain Abscesses.**—Claytor reports a case of multiple brain abscess following empyema, and gives, from the literature, a list of fifty-eight cases of brain abscesses resulting from primary lung disease.

5. **The Suprarenal in Epistaxis.**—Cases of long-continued nasal bleeding obstinate to treatment sometimes occur, and such conditions are the subject of Somers' article. He reports two cases—one of which might be considered extreme in its duration and obstinacy—which were treated by the use of suprarenal extract with great success. The results obtained, he thinks, indicate that it has a further action than that of vascular constriction. It seems to tone up the parts and assist the healing processes like no other remedy. He, therefore, concludes that in addition to its vasomotor effects the drug is of great value for its local nutritive effect and as a pure muscle tonic.

6. **Biochemical Basis of Pathology.**—Bunker's article goes into details of organic chemistry. He comes to the conclusion of Pasteur, that there is some asymmetric force or forces acting in all tissues endowed with life, which is a profound modifier of chemical affinity as manifested in laboratory reactions.

8. **A New Blood-Stain.**—After noticing the stains which have been in favor, such as those of Jenner, Ehrlich, Plehn and Prince, Rosenberger gives the results of his endeavors to find a more durable blood-stain in combination with basic dye. Phloxin showed the granules of the leukocytes beautifully, and methylene blue being one of the best and most uniform stains, he tried these in combination. The formula which worked the best is as follows:

℞.	Saturated aqueous solution of methylene-blue	50
	Saturated aqueous solution of phloxin	20
	Alcohol—95 per cent	30
	Water—distilled	60

He remarks that a precipitate generally forms and the stain needs "shaking before using." The blood-films need to be fixed by heat—115 to 120 C. for 20 minutes—or in equal parts of alcohol and ether, or absolute alcohol. The stain works well in either case. If the preparation is dried from alcohol and ether, the stain is applied and allowed to remain from one to three or four minutes, washed freely in water, dried and mounted in balsam. This is also a fairly good stain for malarial parasites of any variety. It has the advantage of greater durability over those previously employed.

9. **The Use and Abuse of Spectacles.**—The great increase in the use of spectacles is first noticed by Derby, who suggests that ophthalmic physicians as well as opticians may make mistakes. He thinks that probably glasses are worn too much in cases of hypermetropia and too little in myopia. A slight degree of astigmatism, he thinks, can be let alone and, as regards the use of prismatic glasses, it is more and more frequently thought to be the fact that apparent muscular anomalies vary directly with conditions of general health. He, therefore, holds that these may be over-used.

12. **Veratrum Viride.**—This drug, according to Isham, has largely gone out of use among city practitioners, though it still holds its own in the country. He believes there are many cases where its value is not appreciated, and reports six, all of peritonitis, having its origin in appendicitis, in which it was employed with advantage. Its first effects are referable to the glandular system, exciting the sudoriferous glands, the salivary and the liver. These have a therapeutic significance not to be lightly passed over. Especially the action of the sweat glands and of the liver is of importance in aiding the system to overcome toxic states. Its action on the heart also is possibly beneficial. It lowers the temperature through its action on the sweat glands, and he suggests that its direct action on the

neuron may better explain its behavior than the simple statement that it is a depressant of the spinal cord. Its action on the heart muscle itself or its ganglia is suggested, by Isham, to be beneficial in squeezing out waste products and bringing the organ down from an overdistended mechanical organ to one working in perfect order. He believes it may also be a most excellent remedy in acute alcoholism, and the possibility of death produced by it is not considered a serious one.

13. **Delirium Tremens.**—Warbasse reports a case in the practice of Dr. Pilcher, in Brooklyn, where the injection of 40 ounces of saline solution at a temperature of 116 F., into the median cephalic vein in a severe case of delirium tremens, was followed by rapid improvement and recovery. He thinks this method may aid by increasing the amount of circulating medium, diluting the toxins, stimulating excretion, and improving the action of the heart.

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15. **Thymotal.**—This name is given to a carbonate of thymol prepared by Pool, which he claims has special advantages in ankylostomiasis. It is a neutral substance with a fusing-point of 99 C., a boiling point of more than 400 C. It gives no other reaction, save that it is divided into thymol and carbolic acid by alcoholic solution of potassium. A boiling aqueous solution of potash does not break it up, and neither acids nor the human stomach have any effect on it. It is odorless, is not vomited, does not cause dizziness, and is broken up in the body by the bile and mucus. Ankylostomiasis, for which it was devised, seems more rapidly affected by it than by thymol itself. For adults, the dose is 30 gr.; for children, 15 gr., and for babies, 7½ gr., three or four times daily. The treatment must be continued for four days, and a purgative be taken on the fifth, after which the whole treatment must be repeated until no more ankylostomata are found in the stools.

21. **The Axis-Traction Forceps.**—Marx reports his experience with the Tarnier axis-forceps and shows their advantages. He also describes a special method which he calls rotary axis-traction, that he has employed and by which rotation can be brought about without the lesions to the soft parts resulting from the use of ordinary forceps in these maneuvers.

22. **Metrorrhagia.**—The etiology of metrorrhagia due to inflammatory processes in the pelvis is discussed by Cragin, who thinks the usual order of source and sequelæ as regards the endometrium is: 1. Chronic congestion; 2, chronic inflammation; 3, menorrhagia and metrorrhagia. The muscle wall of the uterus itself may take part in the production of the symptom through tumors and chronic interstitial inflammation with atrophy of the muscle tissue and increase in new connective tissue. In some cases, however, the condition seems to be caused by lack of sufficient elasticity in the uterine muscle, interfering with normal muscle contraction. The blood vessels of the uterus, if sclerosed, so as to destroy their elasticity, may naturally produce the morbid conditions. Occasional cases are met with where the endometritis is slight and the hemorrhage seems to be due to lack of contractile power in the arterial wall. The treatment of metrorrhagia depends largely on its etiology; with chronic endometritis, curettage and relief of congestion is best; if acute endometritis exists, cleanliness, drainage and rest. If the symptom is due to interference with the muscular contraction of the walls of the vessels, the treatment depends on the presence or absence of hypertrophied endometrium. The presence of the latter indicates curettage, possibly repeated several times. In the absence of hypertrophied endometrium, or if persistent after repeated curettage, metrorrhagia may justify hysterectomy.

24. **X-Rays in Tuberculosis.**—Rudis-Jicinsky reports experiments made by putting sputum in cultures of bouillon in boxes and treating them with the *x*-ray. He found that certain *x*-rays are similar in their actinic properties to the violet rays of the spectrum, and that various bacteria react differently under such radiation, according to the quality of the plasma and the degree of liquid they contained. Mildly alkaline cultures seem to favor the growth of tubercle bacilli, while in acid media they are rendered inert. Rabbits were inoculated from the cultures mentioned, and their secretions rendered acid or alkaline. In these, where the alkaline treatment was given, fatal tuberculosis ensued. In the other case the animals seemed to do well and lived for two years after exposure to the *x*-ray, and examinations showed healed tuberculous lesions. From the results of these experiments he was led to try, the last two years, the *x*-ray in early cases of tuberculosis that came to him for treatment, with the results that from 20 selected cases, in one year there were 2 deaths, 1 of suicide, 4 failures, and the rest are now doing comparatively well. The time of exposure varied from ten to fifteen minutes in each case, the rays exposed at a distance of filteen to eighteen inches from the body and the fluoroscope applied to the opposite side. He will not say that his cases were cured by the *x*-ray exposure only, for there may have been a spontaneous cure, but they certainly got well. As regards the danger of dermatitis, etc., he can prove that there is absolutely none if the exposures are not unnecessarily prolonged and certain precautions are observed. Treatment must be stopped at once, on the first trace of any burning, itching or discoloration of the skin. He believes that this method has a future and is worthy of extended trial.

25. **Gastric Carcinoma.**—After reporting four cases of carcinoma of the posterior wall of the stomach, treated by palliative anastomosis with gastro-enterostomy and the Murphy button, Vanderveer offers the following as practical deductions: 1. In all cases of continued gastric disturbance that do not yield to medical treatment, careful examination and experiments should be made as to the possibility of malignancy being present. 2. Whether positive diagnosis of malignancy is made or not, the patient continuing to emaciate and suffer, exploration should be done and, if there is any malignant growth, gastro-intestinal anastomosis should be made along the lines suggested by Dr. Weir. 3. The malignant growths in the posterior wall of the stomach are certainly more difficult of diagnosis and sometimes escape the notice of the most careful diagnostician. 4. When an exploratory incision shows that malignant growth in the posterior wall is not possible of removal by resection or otherwise, we should not refuse our patient the benefit of gastro-intestinal anastomosis. 5. In all cases the blood should be carefully examined as a part of the history of the patient, in order to learn of the conditions that may have a bearing on the diagnosis.

28. **Rheumatic Deformities.**—Gibney reports twenty cases of post-rheumatic and arthritic joint deformities, with the results of treatment by various methods. It is difficult to fix upon any one form of treatment, but he can not refrain from commending the forcible breaking of adhesions when inflammatory conditions have subsided or frequent recurrence to these operations and the judicious use of plaster-of-Paris. His faith in absolute immobilization as a promoter of absorption of chronic inflammatory products increases year by year. The protection of joints with limited range of motion by apparatus within the bounds of this motion is also to be commended. There is hardly a joint in the body but will tolerate considerable force at certain times. The treatment which has been most efficient he sums up as a judicious management of the case throughout, correction of deformity, partial restoration of function which renders the patient helpful, and improvement is sure to follow.

29. **Inspection of the Female Bladder.**—Pryor describes a cystoscope devised by himself, consisting of a main tube for inspection alongside of which is attached a smaller tube for carrying the lamp and a stem which holds it. The tube for

illumination extends beyond the tube for inspection, and consequently the rays of light project beyond and outside the latter, no rays entering it. The lamp, lampholder and wires are completely insulated. The advantages of this cystoscope are that the tube for inspection is free from obstruction and free from lamp rays, either direct or indirect, the absence of the necessity of focussing rays of light, the passage of rays of light directly to the part to be inspected, absence of disadvantages inherent in the use of Nitze's cystoscope, the perfect ease with which demonstration can be made, and lastly the absence of heat, and of urine about the trigone and the non-necessity of pumping it out. He lays special stress on the posture which seems, from the illustration, to be a sort of combined Trendelenburg and lithotomy position. He points out its advantages over the knee-chest posture.

30. **Ureine.**—Chace and Gies criticise Moor's recent paper on this subject, maintaining that his chemical methods are faulty, that his ureine is not a chemical species, but is a mixture containing several of the organic substances and a considerable portion of inorganic salts originally found in the normal urine, and its toxicity can be referred to some of these. Consequently it adds nothing to our knowledge of the cause of uremia, nor can his deductions regarding the biologic significance of this urinary complex be accepted.

31. **Dislocation of the Thumb.**—After first noticing the different methods devised for reducing thumb dislocation, Erdmann describes his own. In the case of dorsal dislocation, the operator places his thumbs on the base of the proximal phalanx and the cushion of his index fingers on the dorsal extremity of the metacarpal bone. The forces are then applied in the opposite direction; the index finger pulls the metacarpal bone in a condition of extension or abduction while the thumb raises and pushes the phalanx in a position of flexion. Should the rare condition of volar dislocation exist, the procedure in reference to the operator's thumb and index finger is reversed, the thumb lifting and extending the distal phalanges and adduction or flexion of the metacarpal bone made by the index finger. This method has been used by the author since 1887, without any failures.

32. **Tuberculosis in Prisons.**—Knopf remarks on the prevalence of tuberculous disease and describes the precautions that should be taken; the isolation of tuberculous patients from their fellows, etc., the use of masks to catch the germs when coughing, and the various methods to counteract the prison depression. Aside from any sentimentalism, he thinks we should specially endeavor to combat tuberculosis in this class because they are liable to spread the disease on their discharge.

39.—See abstract in The Journal, xxxv, p. 52.

41. **Xeroderma Pigmentosum.**—Wolff reports several cases of this condition occurring in one family in South Carolina. There was no heredity to account for the disorder, so far as known. Of the six children, two boys and a girl were infected. The disease appeared in each instance in the first summer of life after exposure to the sun, as sunburn. The sunburn did not go away until freckles appeared, which spread and deepened; the skin thinned and shrunk in places; then followed ulcerations, outgrowths and ophthalmic complications. The general health, excepting in one patient, remained unaffected.

50.—**Spinal Cocainization.**—Stone reports his experience with spinal cocainization in obstetric cases, and states that the sudden unpleasant symptom of headache can generally be controlled by glonoin in 1/50 gr. doses, or by hyoscin hydrobromate, 1/150 to 1/200 gr. doses, especially if given just before the injection of cocain. It also reduces the frequency of nausea and vomiting. The high temperature which follows he attributes to tampering with the pressure of the cerebrospinal fluid within the canal, as the same symptoms follow the injection of normal saline solution and other internal injections. In one case, where 1/12 of morphin sulphate was added to the cocain injection alarming symptoms of morphin poisoning ensued. He therefore thinks it is unsafe to use it. As regards the dangers, he thinks the only cases of death from lumbar puncture were from those of cerebral neoplasms and hydrocephalus, where the too sudden withdrawal of the cerebrospinal fluid has caused death. The advantages of the method are that the patient is absolutely relieved from pain for hours, the accoucheur is relieved from anxiety after a favorable injection, and the presence of the anesthetist and his expense can be dispensed with. Too much stress can not be laid on the importance of absolute asepsis during the injection.

54. **New Formation of Urethra.**—Noble reports a case in which, after two unsuccessful operations, he performed a third in which he sutured the mucous membrane over the small sigmoid self-retaining catheter, using what was left of the anterior wall of the original urethra and, between the external orifice of the urethra and the clitoris, the mucous membrane of the vestibule was utilized. The left labium minus was selected also as a tissue from which to form a flap. It is easily drawn over the raw surface and well back into the vagina, and attached by interrupted catgut suture to the raw surfaces which had been prepared and sutured with silkworm gut sutures to the right border of the raw surfaces along the urethra and within the vagina. At the anterior end of the new urethra, near the clitoris, the lateral surfaces of the labium majus were sutured together. In this way not only the floor of the urethra was made of the left labium minus, but a flap of considerable thickness was secured over the region of the neck of the bladder. The result was perfect, and he recommends to others who operate in similar conditions, to use the labium minus in this way. So far as he knows, its utilization thus is original with him.

66. **Optic-Nerve Fibers.**—Seggel reports a case, observed by him, in which there was pronounced hemianopsia, which he accounts for by the aid of accessory symptoms, paralysis of the oculomotor nerve, non-impairment of the sense of smell, as due to infection of the posterior portion of the chiasm. He also quotes another case which had already been reported by Seydel, in which there was a fibroma of the dura mater, clinically located, that had been producing pressure on the left papillomacular bundle, and removed, relieving the condition. These two cases, he thinks, serve to prove that the papillo macular bundles lie in the dorso-medial location.

73. **Tension in Atrophic Eyes.**—Ischreyt takes up the question of ocular tension, illustrating his views by cases. Since the intraocular tension depends on the influx and outflow of liquids, its disturbance can only arise through disorders in this relation. The condition of increased tension has been shown possible by the interference with the outflow uncomplicated by diminished influx. If the disturbance has once taken place there is added an increased secretion brought about by this cause. Both factors unite in bringing about the condition known as absolute glaucoma. While in many conditions of hypertony the disturbed relation between influx and outflow depends primarily on the interruption of the outflow and rarely upon the primary hypersecretion, it is natural to assume that hypotony is primarily brought about by diminished influx, and an investigation on atrophic eyes reveals, indeed, marked injury of the secreting portion of the eye—the ciliary processes. As long as diminution in secretion is slight it may be compensated by increased activity of other portions of the secretory area, and also the lack of aqueous humor may be compensated for by contraction of the elastic capsule of the eye, but with any considerable diminution of secretion considerable hypotony occurs. A slight cause may be sufficient to destroy the balance. While the normal channel of exit, the plexus venosus ciliaris, is free, and the hypotony at the most has caused only a slowing of filtration, the destruction of the ciliary processes and the iris forces the blood of the anterior and posterior ciliary arteries into new channels and thus gives rise to an increased anterior venous outflow; the diminution in tension and the increasing of the collapse of the ocular capsule, remove pressure from the vessels entering the venæ vorticosæ and allow them to dilate; the more the pressure sinks the easier is the venous outflow. Thus a vicious circle develops, and results in a condition known as atrophy of the ball. The rapid outflow of venous blood prevents any general diminution in the arterial current, and thus

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21. **The Axis-Traction Forceps.**—Marx reports his experience with the Tarnier axis-forceps and shows their advantages. He also describes a special method which he calls rotary axis-traction, that he has employed and by which rotation can be brought about without the lesions to the soft parts resulting from the use of ordinary forceps in these maneuvers.

22. **Metrorrhagia.**—The etiology of metrorrhagia due to inflammatory processes in the pelvis is discussed by Cragin, who thinks the usual order of source and sequelæ as regards the endometrium is: 1. Chronic congestion; 2, chronic inflammation; 3, menorrhagia and metrorrhagia. The muscle wall of the uterus itself may take part in the production of the symptom through tumors and chronic interstitial inflammation with atrophy of the muscle tissue and increase in new connective tissue. In some cases, however, the condition seems to be caused by lack of sufficient elasticity in the uterine muscle, interfering with normal muscle contraction. The blood vessels of the uterus, if sclerosed, so as to destroy their elasticity, may naturally produce the morbid conditions. Occasional cases are met with where the endometritis is slight and the hemorrhage seems to be due to lack of contractile power in the arterial wall. The treatment of metrorrhagia depends largely on its etiology; with chronic endometritis, curettage and relief of congestion is best; if acute endometritis exists, cleanliness, drainage and rest. If the symptom is due to interference with the muscular contraction of the walls of the vessels, the treatment depends on the presence or absence of hypertrophied endometrium. The presence of the latter indicates curettage, possibly repeated several times. In the absence of hypertrophied endometrium, or if persistent after repeated curettage, metrorrhagia may justify hysterectomy.

24. **X-Rays in Tuberculosis.**—Rudis-Jicinsky reports experiments made by putting sputum in cultures of bouillon in boxes and treating them with the *x*-ray. He found that certain *x*-rays are similar in their actinic properties to the violet rays of the spectrum, and that various bacteria react differently under such radiation, according to the quality of the plasma and the degree of liquid they contained. Mildly alkaline cultures seem to favor the growth of tubercle bacilli, while in acid media they are rendered inert. Rabbits were inoculated from the cultures mentioned, and their secretions rendered acid or alkaline. In these, where the alkaline treatment was given, fatal tuberculosis ensued. In the other case the animals seemed to do well and lived for two years after exposure to the *x*-ray, and examinations showed healed tuberculous lesions. From the results of these experiments he was led to try, the last two years, the *x*-ray in early cases of tuberculosis that came to him for treatment, with the results that from 20 selected cases, in one year there were 2 deaths, 1 of suicide, 4 failures, and the rest are now doing comparatively well. The time of exposure varied from ten to fifteen minutes in each case, the rays exposed at a distance of fifteen to eighteen inches from the body and the fluoroscope applied to the opposite side. He will not say that his cases were cured by the *x*-ray exposure only, for there may have been a spontaneous cure, but they certainly got well. As regards the danger of dermatitis, etc., he can prove that there is absolutely none if the exposures are not unnecessarily prolonged and certain precautions are observed. Treatment must be stopped at once, on the first trace of any burning, itching or discoloration of the skin. He believes that this method has a future and is worthy of extended trial.

25. **Gastric Carcinoma.**—After reporting four cases of carcinoma of the posterior wall of the stomach, treated by palliative anastomosis with gastro-enterostomy and the Murphy button, Vanderveer offers the following as practical deductions: 1. In all cases of continued gastric disturbance that do not yield to medical treatment, careful examination and experiments should be made as to the possibility of malignancy being present. 2. Whether positive diagnosis of malignancy is made or not, the patient continuing to emaciate and suffer, exploration should be done and, if there is any malignant growth, gastro-intestinal anastomosis should be made along the lines suggested by Dr. Weir. 3. The malignant growths in the posterior wall of the stomach are certainly more difficult of diagnosis and sometimes escape the notice of the most careful diagnostician. 4. When an exploratory incision shows that malignant growth in the posterior wall is not possible of removal by resection or otherwise, we should not refuse our patient the benefit of gastro-intestinal anastomosis. 5. In all cases the blood should be carefully examined as a part of the history of the patient, in order to learn of the conditions that may have a bearing on the diagnosis.

28. **Rheumatic Deformities.**—Gibney reports twenty cases of post-rheumatic and arthritic joint deformities, with the results of treatment by various methods. It is difficult to fix upon any one form of treatment, but he can not refrain from commending the forcible breaking of adhesions when inflammatory conditions have subsided or frequent recurrence to these operations and the judicious use of plaster-of-Paris. His faith in absolute immobilization as a promoter of absorption of chronic inflammatory products increases year by year. The protection of joints with limited range of motion by apparatus within the bounds of this motion is also to be commended. There is hardly a joint in the body but will tolerate considerable force at certain times. The treatment which has been most efficient he sums up as a judicious management of the case throughout, correction of deformity, partial restoration of function which renders the patient helpful, and improvement is sure to follow.

29. **Inspection of the Female Bladder.**—Pryor describes a cystoscope devised by himself, consisting of a main tube for inspection alongside of which is attached a smaller tube for carrying the lamp and a stem which holds it. The tube for

illumination extends beyond the tube for inspection, and consequently the rays of light project beyond and outside the latter, no rays entering it. The lamp, lampholder and wires are completely insulated. The advantages of this cystoscope are that the tube for inspection is free from obstruction and free from lamp rays, either direct or indirect, the absence of the necessity of focussing rays of light, the passage of rays of light directly to the part to be inspected, absence of disadvantages inherent in the use of Nitze's cystoscope, the perfect ease with which demonstration can be made, and lastly the absence of heat, and of urine about the trigone and the non-necessity of pumping it out. He lays special stress on the posture which seems, from the illustration, to be a sort of combined Trendelenburg and lithotomy position. He points out its advantages over the knee-chest posture.

30. **Ureine.**—Chace and Gies criticise Moor's recent paper on this subject, maintaining that his chemical methods are faulty, that his ureine is not a chemical species, but is a mixture containing several of the organic substances and a considerable portion of inorganic salts originally found in the normal urine, and its toxicity can be referred to some of these. Consequently it adds nothing to our knowledge of the cause of uremia, nor can his deductions regarding the biologic significance of this urinary complex be accepted.

31. **Dislocation of the Thumb.**—After first noticing the different methods devised for reducing thumb dislocation, Erdmann describes his own. In the case of dorsal dislocation, the operator places his thumbs on the base of the proximal phalanx and the cushion of his index fingers on the dorsal extremity of the metacarpal bone. The forces are then applied in the opposite direction; the index finger pulls the metacarpal bone in a condition of extension or abduction while the thumb raises and pushes the phalanx in a position of flexion. Should the rare condition of volar dislocation exist, the procedure in reference to the operator's thumb and index finger is reversed, the thumb lifting and extending the distal phalanges and adduction or flexion of the metacarpal bone made by the index finger. This method has been used by the author since 1887, without any failures.

32. **Tuberculosis in Prisons.**—Knopf remarks on the prevalence of tuberculous disease and describes the precautions that should be taken; the isolation of tuberculous patients from their fellows, etc., the use of masks to catch the germs when coughing, and the various methods to counteract the prison depression. Aside from any sentimentalism, he thinks we should specially endeavor to combat tuberculosis in this class because they are liable to spread the disease on their discharge.

39.—See abstract in The Journal, xxxv, p. 52.

41. **Xeroderma Pigmentosum.**—Wolff reports several cases of this condition occurring in one family in South Carolina. There was no heredity to account for the disorder, so far as known. Of the six children, two boys and a girl were infected. The disease appeared in each instance in the first summer of life after exposure to the sun, as sunburn. The sunburn did not go away until freckles appeared, which spread and deepened; the skin thinned and shrunk in places; then followed ulcerations, outgrowths and ophthalmic complications. The general health, excepting in one patient, remained unaffected.

50.—**Spinal Cocainization.**—Stone reports his experience with spinal cocainization in obstetric cases, and states that the sudden unpleasant symptom of headache can generally be controlled by glonoin in 1/50 gr. doses, or by hyoscin hydrobromate, 1/150 to 1/200 gr. doses, especially if given just before the injection of cocain. It also reduces the frequency of nausea and vomiting. The high temperature which follows he attributes to tampering with the pressure of the cerebrospinal fluid within the canal, as the same symptoms follow the injection of normal saline solution and other internal injections. In one case, where 1/12 of morphin sulphate was added to the cocain injection alarming symptoms of morphin poisoning ensued. He therefore thinks it is unsafe to use it. As regards the dangers, he thinks the only cases of death from lumbar puncture were from those of cerebral neoplasms and hydrocephalus, where the too sudden withdrawal of the cerebrospinal fluid has caused death. The advantages of the method are that the patient is absolutely relieved from pain for hours, the accoucheur is relieved from anxiety after a favorable injection, and the presence of the anesthetist and his expense can be dispensed with. Too much stress can not be laid on the importance of absolute asepsis during the injection.

54. **New Formation of Urethra.**—Noble reports a case in which, after two unsuccessful operations, he performed a third in which he sutured the mucous membrane over the small sigmoid self-retaining catheter, using what was left of the anterior wall of the original urethra and, between the external orifice of the urethra and the clitoris, the mucous membrane of the vestibule was utilized. The left labium minus was selected also as a tissue from which to form a flap. It is easily drawn over the raw surface and well back into the vagina, and attached by interrupted catgut suture to the raw surfaces which had been prepared and sutured with silkworm gut sutures to the right border of the raw surfaces along the urethra and within the vagina. At the anterior end of the new urethra, near the clitoris, the lateral surfaces of the labium majus were sutured together. In this way not only the floor of the urethra was made of the left labium minus, but a flap of considerable thickness was secured over the region of the neck of the bladder. The result was perfect, and he recommends to others who operate in similar conditions, to use the labium minus in this way. So far as he knows, its utilization thus is original with him.

66. **Optic-Nerve Fibers.**—Seggel reports a case, observed by him, in which there was pronounced hemianopsia, which he accounts for by the aid of accessory symptoms, paralysis of the oculomotor nerve, non-impairment of the sense of smell, as due to infection of the posterior portion of the chiasm. He also quotes another case which had already been reported by Seydel, in which there was a fibroma of the dura mater, clinically located, that had been producing pressure on the left papillo-macular bundle, and removed, relieving the condition. These two cases, he thinks, serve to prove that the papillo-macular bundles lie in the dorso-medial location.

73. **Tension in Atrophic Eyes.**—Ischreyt takes up the question of ocular tension, illustrating his views by cases. Since the intraocular tension depends on the influx and outflow of liquids, its disturbance can only arise through disorders in this relation. The condition of increased tension has been shown possible by the interference with the outflow uncomplicated by diminished influx. If the disturbance has once taken place there is added an increased secretion brought about by this cause. Both factors unite in bringing about the condition known as absolute glaucoma. While in many conditions of hypertony the disturbed relation between influx and outflow depends primarily on the interruption of the outflow and rarely upon the primary hypersecretion, it is natural to assume that hypotony is primarily brought about by diminished influx, and an investigation on atrophic eyes reveals, indeed, marked injury of the secreting portion of the eye—the ciliary processes. As long as diminution in secretion is slight it may be compensated by increased activity of other portions of the secretory area, and also the lack of aqueous humor may be compensated for by contraction of the elastic capsule of the eye, but with any considerable diminution of secretion considerable hypotony occurs. A slight cause may be sufficient to destroy the balance. While the normal channel of exit, the plexus venosus ciliaris, is free, and the hypotony at the most has caused only a slowing of filtration, the destruction of the ciliary processes and the iris forces the blood of the anterior and posterior ciliary arteries into new channels and thus gives rise to an increased anterior venous outflow; the diminution in tension and the increasing of the collapse of the ocular capsule, remove pressure from the vessels entering the venæ vorticosæ and allow them to dilate; the more the pressure sinks the easier is the venous outflow. Thus a vicious circle develops, and results in a condition known as atrophy of the ball. The rapid outflow of venous blood prevents any general diminution in the arterial current, and thus

no secondary, compensatory endarteritis develops. As regards the compensatory arrangement of the eye it seems probable that the anterior venous channel of outlet acts as a regulator of circulation in the anterior segment of the ball: in case of interference either in the venous or arterial area the excess blood is easily carried off through these channels.

74.—See abstract in The Journal of January 12, p. 127.

75.—Ibid., p. 125.

83. **Myocarditis.**—The pathology of myocarditis is noticed by Edwards, who remarks that we can not clinically distinguish with absolute certainty the difference between acute and chronic degenerations and inflammations. Much of our present confusion is based upon the fact that the microscope can not gauge the degree of cardiac inco-ordination and often fails to indicate its cause. Chronic myocarditis must be studied in the light of more acute changes in which successive pathologic alterations are most easily observed. It is probably not a disease of itself, but a sequel of previous retrogression. It is a secondary process, it plays no active rôle, but compensates for the destruction of the heart tissue while it is itself a measure of that loss. While valvular disease is not necessarily affiliated with myocarditis, it is indirectly associated with it. The condition may be complicated by partial heart aneurysms and heart ruptures.

84. **Chronic Myocarditis.**—According to Quine, myocardiac diseases are more frequent and important than generally supposed. The false diagnosis of the condition is rarer than the failure to recognize it. Among the earliest symptoms is dyspnea: Cheyne-Stokes respiration commonly occurs during sleep. The patient may not be able to lie down on account of the gravity of the dyspnea. The pulse is ordinarily slow, fever intermittent and irregular. Intermittency is a more common feature than ordinary irregularity. There is often actual pain in the region of the heart, and the irregularity may be felt by the patient himself. The area of cardiac dulness is usually increased, the apex-beat displaced downward. The aortic second sound is accentuated, indicating arteriosclerosis. Increase in the volume of the heart, diminution in the pulse, signs of weakness of the muscles indicate failure. Local and physical debility are common in advanced stages. The pseudo-apoplectic attacks, and occasionally real apoplexy, may be the terminal complications. When the heart muscles begin to yield, dilatation takes place, symptoms of venous congestion appear in all parts of the body—bronchial catarrh, lung edema, liver enlargement, gastro-intestinal catarrh; renal insufficiency is an early and almost constant symptom. Notwithstanding the tendency to somnolency sleep is *unrefreshing and disturbed*. In the advanced stages the cardiac impulse is feeble, the heart signs weak, tremor cordis, vertigo and other symptoms appear.

88. **Prognosis of Chronic Myocarditis.**—The following is the summary of Preble's paper: 1. Chronic myocarditis is an incurable, progressive disease, which does not show itself clinically until considerably advanced. 2. While the prognosis is determined by the site and extent of the process, there is no constant relation between the intensity and duration of the clinical manifestations and the pathologic changes. 3. Because of these facts, the process must inevitably cause death, but it is impossible to foretell whether in a short time or after the lapse of years, and whether it will occur suddenly or after a prolonged period of cardiac insufficiency. 4. The more prominently marked the paroxysmal manifestations, the angina, pulmonary edema, and asthma are, the more probable is sudden death. 5. The more marked any renal, pulmonary or arterial changes are, the more unfavorable the prognosis. 6. The better the habits, financial condition and intelligence of the patient, the better the prognosis, other things being equal.

92. **Angina Pectoris.**—According to Eckley, angina pectoris is a neuralgia of the cardiac plexus from which pain is reflected to all parts of the body. The anatomical order of nerve involvement, both primary and reflex, seems to him as follows: 1. Cardiac plexus. 2. The brachial plexus. 3. The intercostals. 4. The phrenic. 5. The trigeminus.

93. **Enterostomy in Obstruction.**—Senn reports two cases, and in conclusion emphasizes the following points: 1. The value of temporary enterostomy in acute intestinal obstruction in selected cases, especially where facilities are not favorable for a laparotomy, and where the patient's condition does not warrant such an operation. 2. Enterostomy is a simple operation, requiring ordinary skill, while laparotomy with radical treatment of the obstruction is very critical. 3. The opening in the intestine should not exceed one-half inch in length, parallel with the axis of the bowel, thereby readily closing after its purpose has been fulfilled. 4. If the obstruction persists after enterostomy, a radical operation can be performed at a later date, when the acute symptoms have passed away.

101. **Influence of Alcohol on Muscle Work.**—The conclusions of Destree's paper are that alcohol has an apparent favorable effect on the work product, whether the muscle is weary or not, which appears almost immediately, but is very transitory; directly afterward it has a very decided paralyzing effect. About one-half hour after taking alcohol the muscle power reaches the maximum; subsequent doses increase with difficulty. The subsequent paralyzing effect of alcohol outweighs the momentary stimulation. The total work product is less than is produced without it. Similar paralyzing effects are not observed to follow the use of tea, coffee, etc.

102. **The Action of Alcohol.**—The action of alcohol in altering the functions of cells subjected to pathogenic organisms is the subject of Woodhead's article. He calls attention to the experiments and observations of various authorities, especially those of Abbott and Delcarde. These show that attenuated disease-producing organisms, which under ordinary circumstances do not kill, bring about such a result when the animal has been previously treated with alcohol, for example in rabies, tetanus and anthrax, and Delcarde draws the conclusion that patients who have been bitten by a mad dog should abstain from the use of alcohol, not only during the process of treatment, but for a long period afterward, while immunity is being gained. There is no doubt that in addition to its specific action alcohol has a general mal-nutritious effect, in its action on the mucous membranes of the stomach, etc. The susceptibility induced by alcohol to excess is somewhat similar to that induced by starvation, in which we see the resistance of animals to particular forms of infection very markedly diminished.

105. See abstract in The Journal, xxxv, p. 1501.

109. **Degeneration of Spinal Cord.**—The general conclusions derived by Putnam and Taylor are: 1. That a well-defined lesion of the nervous system particularly localized in the cord exists, which may for the present be termed simply "diffuse degeneration." 2. That no fundamental characteristics of the lesion have been found depending on different causes. 3. That anemic states have been shown at times to be a concomitant condition, but not necessarily a cause. 4. That the actual causes are still wholly obscure.

125. **Hematemesis.**—The surgical treatment of gastric hemorrhage is noticed by Armstrong, who reports five cases in which he has himself operated. He offers the following suggestions, putting aside the cases of sudden death: 1. If a patient vomits twenty ounces of pure blood and another twenty ounces in four to six hours, operation should be performed if the surroundings are favorable and the condition of the patient is such as to give reasonable hopes. 2. If a smaller hemorrhage of from four to ten ounces continues to occur at intervals, and medicinal and dietetic treatment or rest fails to arrest in thirty-six to forty-eight hours, surgery is applicable. 3. In so-called chronic cases which are not relieved by three months of medical treatment. 4. In any case and at any time, when, in spite of medical treatment, the patient is evidently passing into a condition of anemia where operative measures can not be undertaken with any degree of safety. As regards the operation, he says it is well to examine for external evidence of internal lesion but, failing to find this, it is well to open the anterior wall sufficiently to enable the thorough inspection of the whole of the mucosa. If the bleeding point can not be found, then pyloroplasty or gastro-enterostomy should be performed with a

view to secure such a degree of rest in the stomach walls as will favor clot and subsequent healing. If the bleeding point is found, treatment will depend on its locality and nature, extirpation of ulcer, ligation, thermocauterizing to stop oozing, etc. After operation, rectal feeding and salines are indicated.

128.—See abstract in THE JOURNAL, xxxv, p. 1500.

129.—Ibid.

133. **Smallpox.**—Bryan suggests the following in the treatment of smallpox: Scrub the skin with strong alkaline soap and water in order to remove the oil naturally existing, and then wash with alcohol and then again with 1 to 500 solution of bichlorid of mercury, following with a solution of peroxid of hydrogen, each of these washings being ten to fifteen minutes in duration. Finally, the parts are well wrapped in an envelope of borated cotton. In the case thus experimented on, this treatment was applied to the forearms and hands, where there was a distinct papillomatous eruption, with the result that the papules in this region failed to become purulent, while in other parts of the body they followed their regular course, with the usual results. He suggests this local method of treatment and alludes to Osborne's treatment as reported in THE JOURNAL for April 28, 1900, as supporting his general views.

138. **X-Rays.**—In his discussion of the *x*-rays and their use in surgery Rhamy says that when the subject and apparatus are so placed that the electric current is felt he fears an *x*-ray burn. The only one he ever had was produced under these circumstances, on himself, and he can produce a burn at will by simply adjusting the apparatus so that he can feel the current, then exposing long enough.

140. **Influenza in Infants.**—The almost invariable influenzal infection of infants during an epidemic is noticed by Zahorsky, who calls attention to the characteristic symptoms: The contagion, typical fever curve, typical appearance of fauces. catarrhal symptoms of upper air-passages, presence of bacilli. The common colds, he thinks, are not due to drafts, etc., but are often the effect of an influenza epidemic. In infants the afebrile form is exceptional. The characteristic fever curve is almost diagnostic. There are certain other signs, however, such as high fever in the morning, great irregularity and frequent relapses. The grippal infection in infants has the following characteristics: The anterior pillars of the fauces and the posterior edge of the soft palate are marked by a congestion, the inflamed margin of the velum palati being sharply defined and usually about one-fourth of an inch wide. The catarrhal symptoms are not so universal, but they are characteristic: The grippal infection of the small bronchial tubes in feeble infants is a very serious matter. The principal symptoms are cyanosis and great dyspnea; the respiratory murmur is feeble; infection of the lungs is not common. The clinical forms of influenza are enumerated as follows: 1. Acute fever with angina. 2. Acute coryza with or without fever. 3. Acute laryngitis with or without spasmodic croup. 4. Acute bronchitis. 5. Acute bronchiolitis. 6. Bronchopneumonia. 7. Lobar pneumonia. 8. Acute gastritis, and gastric duodenitis. 9. Acute myocarditis. Among the rarer lesions he mentions acute leptomeningitis, endocarditis, a peculiar pertussal cough, jaundice, hemorrhagic nephritis, otitis, nervous sequelæ, etc. The treatment is summed up in: 1. Rest and fresh air. 2. Careful attention to the diet. 3. Prevention of secondary infection. 4. Supervision and control of bodily functions.

FOREIGN.

British Medical Journal, February 23.

Remarks on the Conclusions of the Report of the Anesthetics Committee of the British Medical Association. GEORGE EASTES.—This article gives the conclusions of the report of the Committee on Anesthetics for the British Medical Association, with comments theron. The former can be given only in a somewhat abridged form. The conclusions are deduced from over 13,000 cases of chloroform anesthesia, 4595 of ether, 2071 of gas and ether, 2911 of nitrous oxid, and varying numbers from 155 to over 700 cases of anesthesia from various mixtures—A. C. E. mixture, chloroform and ether, etc. The cases of danger, including deaths, considered to be due entirely to anesthesia, occurred in a percentage of 0.582 per cent. of chloroform anesthesia, and in ether only 0.065. The highest percentage was under the chloroform group, which includes A. C. E. mixture and chloroform, A. C. E. followed by ether, etc., and the average danger rate was 0.584. Under the ether group, including only ether, gas and ether, ether with other compounds, etc., it was 0.085. Although, excluding nitrous oxid, ether was accepted as the safest routine agent, certain circumstances, the state of the patient, nature of the operation, etc., may make some other anesthetic or combination safer and easier. No method of administration of chloroform is safe from danger, but the danger largely depends on the anesthetist. There is no possible conclusion from the evidence as to the best method of administration of ether or gas and ether. The data warrant the conclusion that A. C. E. mixture should not be given in a closed inhaler, and this applies to all mixtures containing chloroform. The committee was not able to give any conclusions as to the best methods of restoration, but finds that anesthesia is more commonly associated with complications and dangers in males than in females, and that, not including infancy and taking anesthetics collectively, the complications and dangers increase with advancing age and the anesthetics are proportionately more dangerous as the gravity of the patient's state increases. Danger to life is specially likely to be incurred in the earlier stages, while the tendency to less grave complications increases with the duration of the anesthetic, and all complications increase with the gravity of operations. As regards chloroform, the Commission finds that chloroform is about twice as dangerous in males as in females. It is most dangerous during early infancy and after 30 years of age, and is more dangerous than any other anesthetic in cases of good health. In grave conditions it is still less safe, but the disparity between it and others is less marked. In a large proportion of cases the symptoms that are observed are those of primary circulatory failure. Imperfect anesthesia is the cause of a large number of cases of danger from chloroform, and vomiting, which may lead to trouble, seems to be more frequent under this drug than under others. Struggling is much more frequent under chloroform; it must also be regarded as a source of danger, and the tendency to circulatory complications increases directly with the relative amount of chloroform in the anesthetic employed. While vomiting is more common after ether, severe and prolonged vomiting is more frequent when chloroform has been used. Circulatory depression following anesthesia is more common after chloroform than after ether, and while the respiratory complications as a whole are equally frequent under ether and chloroform, those that occur under ether are of a trifling and transitory nature, and those under chloroform more grave and persistent. As regards ether, the complications of anesthesia are more frequent in males than in females, but more dangerous to the latter. Ether, when employed throughout or preceded by nitrous oxid or A. C. E. mixture, is singularly free from danger in healthy persons. The minor troubles due to laryngeal irritation and increased secretion are more common than under chloroform and its mixtures. Struggling occurs more frequently when given alone, but rarely leads to danger. The after-vomiting is more common with ether, but is usually transient, and bronchitis is much more frequent as an after-effect. With gas and ether the dangers are more common in females, but the complications are more frequent in males. Of other mixtures, A. C. E. holds an intermediate position between chloroform and ether, being more dangerous in males than females, but in a less marked degree than chloroform. The administration of ether antecedent to chloroform does not abolish the tendency to chloroform dangers. The other various mixtures and successions of anesthetics were recorded too infrequently to justify definite conclusions. As a general conclusion, the committee is convinced that by far the most important factor in the safe administration of anesthetics is the experience which has been acquired by the anesthetizer. In many cases the anesthetization completely transcends in gravity and importance the operation itself. To insure success it is absolutely essential that an anesthetist of large experience should conduct the administration.

The Lancet, February 23.

Passive Effusion into the Knee-Joints, Occurring in Women and Young Girls. William H. Bennett.—Attention is called by Bennett to a painless and unnoticed effusion into the knee-joint of girls of 12 or 13 years of age, and in young women; a number of cases are reported. The alleged cause is often injury, but the condition seems to be somewhat dependent on the catamenial periods and uterine functions. It is well to always inquire into these painless swelling of the knee-joint in girls, say from 13 to 14 years, or women at the climacteric. If these functional irregularities exist there will generally be fluid in both knees, probably more on the right side. Though the patient may be convinced that it is due to some recent injury, the other factor is probably primarily responsible. In the treatment, correct interpretation of these cases is of vital importance. If attention be too much concentrated on the knee alone, the management may be misled. Primary treatment should be directed to correction of the faulty functions, while moderate exercise, massage of the knee and outdoor life are collateral indications. In any case splints and confinement should be avoided. The prognosis is always good provided the primary cause of the effusion can be cured.

The Diagnosis and Treatment of Abscess in Connection with the Vermiform Appendix. Rutherford Morison.—The following are the conclusions of Morison's article: "The early diagnosis of abscess in connection with the vermiform appendix is of great importance. A dangerous abscess may be present without any of the ordinary symptoms or signs of pus formation. The diagnosis is based upon the history of an acute attack of appendicitis and the presence of a definite tender lump. The position of the appendix and the relations of the abscess may be foretold by a careful study of the tumor. The diagnosis of pelvic cases in women is attended by special difficulties. In men and women bimanual examination may clear up an otherwise doubtful case. Spontaneous relief and possible cure may follow the discharge of pus into adjacent bowel. An abscess, though of appendicular origin, may be remote from the appendix and may be residual. Many of such pus collections are due to the localization of a general peritoneal infection which has been recovered from. Early operation is the proper treatment and with few exceptions the vermiform appendix should be removed at the same time as the abscess is drained (pelvic cases form the chief exception to this rule). The abdominal opening should be large enough to permit of perfect inspection of all manipulation and the abscess should be drained from behind."

Annales de la Soc. Med. de Liege, December.

Treatment of Goiter with Large Doses of Iodin. L. Beco.—In the writer's experience in Belgium, persons with goiter are usually anemic. He therefore administers potassium iodid, combined with ferrous iodid. If this treatment prove ineffectual, he orders tincture of iodin internally, which is suspended at the first symptom of gastric intolerance. One patient, with a goiter rebellious to all other measures, was completely cured in a few weeks with tincture of iodin, of which he took from 40 to 120 drops a day without inconvenience. Beco no longer gives it timidly, but increases from 15 to 30 or 40 drops during the first fortnight, and has had only one case resist this treatment. He generally prescribes 25 gm. of fresh tincture of iodin to 5 gm. of potassium iodid: 5 to 40 drops in a glass of water or beer three times a day.

Bull. de l'Acad. de Med. (Paris), February 12.

Appendicitic Black Vomit. Dieulafoy.—Under the influence of the toxic infection of appendicitis, acute hemorrhagic ulcerations may be produced in the stomach, similar to the gastric hemorrhagic ulcerations of pneumococcus toxi-infection, of strangulated hernia, or simple ulceration. The ulcerative process is alike in each; there is an acute hemorrhagic necrosis of some small territory of the mucous lining of the stomach. When an arteriole becomes involved, hemorrhage occurs, which is more or less copious, repeated or fulminating. The alterations in the liver—icterus and urobilinuria—are due to the toxins generated in the appendix, as are also the alterations in the kidneys—albuminuria, oliguria, anuria and symptoms of uremia. The stomach lesions and hematemesis also form part of the appendicitic toxic syndrome, isolated or associated with other manifestations. Dieulafoy has observed six cases of this complication during the last nine months, all but two rapidly fatal, the patients being from 10 to 68 years of age. The operation was performed on the third or fourth day after the commencement of the appendicitis in each case, too late to prevent the progress of the toxic processes. The hematemesis appeared soon after, and was fatal at its second recurrence. Lucas-Championnière reports a somewhat similar case cured by alkaline lavage of the stomach.

Gazette Med. Belge (Liege), February 7.

Death from Use of Peroxid of Hydrogen. C. Moreau.—The peroxid had been applied to an amputation wound. Its action on the catgut used for the ligatures caused them to come untied, and the occluding clots became disorganized, entailing secondary hemorrhage, with a fatal result.

Presse Med. (Paris), January 26 and February 20.

Uremic Icterus. A. Delteil.—A case of severe icterus is described which presented all the symptoms of uremic coma in addition to the icteric manifestations, a hepatonephritis, confirmed by the autopsy. The icterus evidently had been grafted on a preceding nephropathy which enhanced the gravity of the prognosis.

Agglutination of the Pneumococcus. V. Griffon.—The characteristic sero-reaction of the pneumococcus is most marked with cocci derived from the patient. Tests with 186 subjects revealed the participation of the pneumococcus in a number of cases in which its presence was unsuspected. The cocci agglutinate in lumps, then resemble fragments of pseudomembrane and, finally, form in the shape of a cup. The test requires 1 to 2 c.c. of serum.

February 20.

Sterilization of Cocain. T. Tuffier.—There are three methods of sterilizing cocain hydrochlorate, all of which are absolutely reliable and do not alter the essential properties of the drug. Tyndall's is the first, and most convenient for certain conditions. The second method is to heat the cocain in a water-bath or the autoclave to 120 C., in a fused tube or plugged vessel. The solution does not undergo any decomposition, and the variation in the light-rotating power is too insignificant to interfere in the least with its action. The third and usually the most convenient method does not require heat. It was devised by Roux and is merely sterilization by filtration through a Chamberland filter. The Chamberland porcelain hollow candle is supported by cotton in the neck of an ordinary test-tube. The solution of cocain is poured into the candle which is plugged with cotton. As the fluid filters through into the test-tube it is absolutely sterile. The only precaution necessary is to throw away the fluid first filtered—two or three times the contents of the candle—to allow the walls to become saturated. In all these processes a 2 per cent. solution is used and the light-rotating power does not vary from the standard—.72 degrees at 10 C. Extreme precautions are necessary to obtain a pure article.

Semaine Medicale (Paris), January 23 and February 20.

Localized Pain in Thorax a Sign of Perforation of Stomach in Peritonitis. J. L. Faure.—Two typical cases are related in detail to demonstrate that acute disturbances of the viscera below the diaphragm, particularly perforation of the stomach, are accompanied by a sharp pain in the thorax, in the shoulder, or between or just below the scapulæ. In generalized peritonitis the determination of perforation of the stomach is of the greatest importance and, consequently, careful inquiry should be made for this thoracic pain in or between the shoulders, whether it existed at the commencement of the trouble, etc. If noted, it is almost pathognomonic of a perforation of the stomach or adjacent organ, and the abdominal incision should be made in the epigastric region.

Identity of Germ Causing Vaccination and Variola. M. Funck.—The author presents arguments to prove that vaccination is not a microbian disease, but that it is caused by a protozoon which is readily recognized in the vaccination as also in the variolous pustules. Inoculation of this protozoon derived from either source produces all the classic symptoms of vaccination and protects animals against further inoculations. Vaccination is therefore merely an attenuated form of variola, and the immunization conferred by it forms no exception to the general laws of specific immunity. The sporozoa were first described by Pfeiffer.

Increase of Hyperchlorhydria by Opium. R. Lepine.—Recent experimental research, reported by various writers, has shown that opium increases the secretion of hydrochloric acid, probably by central excitation, and consequently that it exaggerates the pains in hyperchlorhydria. This does not preclude the use of opium in case of carcinoma of the stomach, as there is no hypersecretion under these circumstances.

Artificial Burns in Treatment of Erysipelas. S. Z. Rabinovitch.—During the last thirteen years the author has treated more than 200 patients by this method, with no deaths and no recurrences. He applies a moist gauze compress to the erysipelatous patch. A wad of cotton dipped in alcohol is placed on a metal plate, held with forceps, and the alcohol is ignited. The flame is then passed over the moist compress again and again as long as the patient can bear it. This maneuver is repeated nine to twelve times a day in three or four sittings. The superficial burn that results soon heals; the heat destroys the streptococci and the steam causes intense local leucocytosis.

Mixed Cocain-Ether Anesthesia. Jaboulay.—A subcutaneous injection of 1 c.c. of a 2.5 per cent. solution of cocain, just before general ether anesthesia, enables profound anesthesia to be rapidly produced with a minimum of ether.

Archiv f. Exp. Path. (Leipsic). February.

Compensation of Mitral Defects. D. Gerhardt.—Experiments made on dogs by the author of this communication confirm the significance of hypertrophy of the right ventricle as the essential factor in the compensation of mitral defects. This compensation, however, entails injurious after-effects by the alterations in the walls of the pulmonary arteries and lungs permanently subjected to such high pressure.

Archiv f. Kinderheilkunde (Stuttgart), XXXI, 1 and 2.

The Scientific Principles of Infant Feeding. A. Monti.—The acidity of cow's milk must be reduced to that of human milk. This can be done with sodium carbonate, which also has the effect of rendering the action of rennet on cow's milk more like that on human milk. The albuminoid elements in the former can be made to approximate those of human milk by diluting with whey instead of water, which also affects the casein and approximates it to human milk. The whey also supplies the fat and the sugar required to render cow's milk more nearly like human milk. In Monti's experience infants have thrived best on milk sterilized by heating to 60 or 70 C. and then cooled to 6 C. and kept at this temperature until used.

Appendicitis in Children. P. Selter.—Vomiting, obstipation, fever and other symptoms vary with different cases. The pulse sometimes shows no alteration, and no tumor can be discovered. Even the local pain is not always present, but there is one symptom that never fails. This is a palpable resistance of the right wall of the pelvis when palpated through the rectum. In 11 of Selter's 28 cases the little patient recovered spontaneously, including 2 or 3 who had had two or three previous attacks.

Archiv f. Klin. Chir. (Berlin), LXII, 2, 3 and 4.

Surgery of the Stomach. G. Kelling.—Among the points established by Kelling in the course of his experimental research on dogs, is that even a small amount of solid food may be followed by perforation after operation on the stomach, and that liquid food is much safer for a time. The rapid evacuation of the stomach that occurs after a gastroenterostomy, is due to the lack of the motor inhibition normally exerted by the filling of the duodenum. Conditions are less favorable for intestinal digestion of albumin and fat after gastro-enterostomy, on account of the absence of the normal excitation of the flow of bile and of bile and pancreatic juice into the stomach, but the neutralization of hydrochloric acid is less perfect than when it has to pass the entire length of the duodenum. Consequently the loop for the anastomosis should be selected as near the stomach as possible. This and the other disadvantages of gastroenterostomy become compensated in time if the organism has sufficient recuperative power. Hence the operation should not be delayed until the system is exhausted by the lesion.

Statistics of Sacral Extirpation of Carcinoma of the Rectum. W. Prutz.—The mortality in 542 cases collected by Prutz has been 115, or 21.2 per cent. He shows that Pichler's reports of a mortality of 14.3 per cent. in 563 operations are erroneous, as he included operations for other lesions than malignant tumors.

No. 3.

New Method of Removing the Seminal Vesicles and Vas Deferens. H. H. Young.—The operation by the method described is very simple and comparatively devoid of danger. Two cases are reported. After catheterization of the ureters, a linear median incision is made, with a short transverse incision at the top just above the umbilicus. A surprisingly good view of the field of operation is afforded by this incision. The bladder is opened in case of suspected disease, the ureters catheterized, and the peritoneum detached from the posterior surface of the bladder wall. The vesicles and vas are isolated in the direction toward the internal ring. The upper portion of the prostate is then incised transversely. The testicle is taken out of the scrotum by an inguinal median incision, the spermatic vein ligated and the vas deferens severed. The rest of the vas can then be drawn into the abdominal cavity, and the testicle, vas and seminal vesicle are then easily removed. This route is much simpler and allows more radical operation than the sacral. The vesicle, and with it a circumscribed portion of the bladder, can be extirpated through a single incision and at one sitting.

Conservative Operations for Renal Retention. C. Fenger.—Kuester, Fenger and Bazy were appointed to present this subject at the recent International Medical Congress, in the section of urinary surgery. The thirty cases on record of conservative operations for renal retention from a stricture, valve-formation or spur in the ureter, are reviewed and tabulated in Fenger's report. They include ten personal cases; no other surgeon had a record of more than three at the time the tables were compiled. The stricture or valve-formation was found at the exit of the ureter in 26 cases, and below the renal pelvis in 3. Israel's was the only case cured by pyeloplication alone. The three deaths that occurred can not be ascribed to the operation in any case, as these conservative operations are simple and reasonably safe. Good functional results were obtained in 22 cases, that is, in 73 per cent. Recurrence of the obstruction and consequent retention compelled nephrectomy later in 2 of Fenger's cases. An obstruction at the pelvic orifice of the ureter may be treated by a transpelvic plastic operation or an extrapelvic incision, plastic operation and pyeloplication. Fenger prefers the extrapelvic incision for small cystonephrotic sacs, but a transpelvic plastic operation is necessary for a large sac, on account of the difficulty of reaching the ureter from outside the pelvis. In 2 of the 9 cases thus operated on, obliteration followed later. Six cases were treated by resection and reimplantation of the ureter. The results were gratifying in the 4 in which the operation was fully completed. The operation was extrapelvic in 11 cases, and proved successful in all but 1; this was a case of remittent, infected cystonephrosis in a small floating kidney. The stricture was below the pelvic orifice of the ureter. Inflammation persisted and the kidney was removed a year later.

No. 4.

Protheses for Gastro-Intestinal Anastomosis. G. Kelling.—The button should be made of absorbable material, but at the same time it must not be digested by the alimentary juices. To meet these contradictory indications, Kelling has devised a button in one piece, made of decalcified bone or ivory. To protect it from the digestive juices it is coated with rubber, except in the wide groove on the outside, in which the intestine is tied. A ring of rubber fits into a shallow groove at one end of the button. After the intestine has been sutured in place in the wide groove the rubber ring is slipped out of the shallow into the wide groove, where it presses the intestine firmly against the button. As the intestine becomes necrotic the rubber ring takes its place on the button, but does not completely fill the groove and the digestive juices commence to work on the unprotected substance of the button. Tests on large dogs have been eminently satisfactory in regard to the advantages of the new button. The same principle is applied to a wooden button for suturing the colon after resection. The sutured portion of the intestine fits in a groove, folded back on itself as in an invagination, and the ring fits on the fold. Its pressure hastens necrosis of the part. In a cholecysto-enterostomy, for instance, Kelling has derived great benefit from the employment of two small, strong metal plates with rounded edges, 1½ by ¼ inches in size, with a hole at each end. A rubber thread is passed through the holes in each plate and one is introduced through a small incision in each end of the loop. By drawing the thread tight the flat surfaces of the two places are coaptated. The plates were released by the necrosis of the tissues between them, and evacuated the fifth to the eleventh day in the tests on dogs.

Means of Occluding the Stomach in Resection. G. Kelling.—Two strips of decalcified bone or ivory, with eight holes in each, are applied on each side of the stomach, above the part to be resected. They should be as long as the stomach is wide at the spot. They are then laced together through the stomach walls with a rubber thread which hermetically closes the organ when it is drawn tight. The strips have been applied in four operations on dogs, with brilliant success. In two dogs not killed until seven and nine days had elapsed, the strips had completely disappeared. [This suggestion recalls the method of hemostasis used on the liver in the operation to separate the Brazilian xiphopagus last year.—Ed.]

Retrograde Sounding of Strictures of the Esophagus. H. Alapy.—All attempts to pass a sound through the double cicatricial stricture proved unavailing in the case reported. Gastrostomy was done five months after the trauma, but efforts to penetrate the stricture from the stomach also failed until an elastic French bougie—No. 15.—olive-tipped, was inserted as far as the stricture in the cardia. A No. 20 silk catheter was then slipped on over the bougie to the stricture and the bougie withdrawn. A fine urethral bougie was then inserted through the catheter and this was finally worked through the stricture into the mouth. By this combination of bougie, catheter and urethral bougie false routes are avoided.

Centralblatt f. Chir. (Leipsic), February 23.

Absence of Sensibility in Abdominal Cavity. K. G. Lennander.—Clinical experiences are related in this communication which indicate that the stomach, intestines and mesentery, the gall-bladder, visceral peritoneum, kidneys and liver have no nerves of sensibility to pain, contact, warmth or cold. On the other hand, the parietal peritoneum is richly supplied with pain nerves. The healthy individual has no nerve-knowledge of the processes of digestion transpiring within him, nor of the functional activity of kidneys or liver. Ulcerations of the alimentary canal may exist without causing pain, and likewise calculi in the biliary passages. The only intimation we have of even strong peristaltic movements is the rumbling of gases. The cause of colic pains is the stretching of the parietal peritoneum in consequence of the acute distention of some portion of the intestines. Affections in the alimentary canal are not accompanied with pain until the parietal peritoneum becomes more or less involved, and adhesions form. In all cases of pelvic and generalized peritonitis palpation from the rectum and vagina is of the greatest importance, as the parietal peritoneum in the small pelvis can thus be directly investigated. These facts are important for abdominal surgery. The incision should be longer than usually made at present to avoid painful traction on the parietal peritoneum. By this means it is not necessary to have the anesthesia so profound, and the anesthetic can be suspended when the manipulations are restricted to the insensible viscera.

Centralblatt f. Gyn. (Leipsic), January 19, February 2 and 9.

Treatment of Backward Displacement of the Gravid Uterus. L. Seeligmann.—The incarcerated uterus was gradually forced into a slanting position with its longitudinal axis parallel with the second oblique diameter of the pelvis, by traction on the portio and gentle pressure on the fundus in the opposite direction. A colpeurynter was then placed under the fundus and, as it filled, the uterus gradually resumed its normal position, the patient reclining on the side, with the pelvis elevated, for two and a half hours. Four cases have been successfully treated in this way by the author.

Protection of the Perineum During Delivery. J. Hofbauer.—As the head is passing the vulva, when the posterior angle of the anterior fontanelle is just beginning to emerge, Hofbauer gives the head a twist of 40 degrees at most to right or left. This brings the soft fontanelle opposite the perineum, and the danger of laceration is almost sure to be averted.

Healing Processes in Tubercular Affections. A. O. Lindfors.—Retrogressive atrophy is the essential element in the healing of tubercular lesions, Lindfors is convinced. He has observed a case in which the atrophy due to the menopause arrested the tubercular process in one Fallopian tube, while the tuberculosis continued its progressive course in the other tube, in which the nutrition had been maintained by a growing cyst. He suggests that ligature of the vessels sufficient to cause atrophy, but not necrosis, may prove a valuable aid in the cure of tubercular processes.

Extirpation of Right Ovary Through Left Inguinal Incision. L. Remprecht.—Inguinal hernia prevented an incision on the side of the lesion. The removal of the ovary and cyst was comparatively simple, although the success of the operation was jeopardized by the abnormal shortness of the infundibulo-pelvic ligament.

Massage in Gynecology. R. Olshausen.—The only conditions in which massage has a favorable influence in gynecology are in case of a torpid exudation, all inflammatory symptoms long past, and then only when favorably located, with merely the abdominal wall between it and the fingers. Massage is applicable to tubal tumors only when they are hydrosalpingitic and it is possible to obtain the elimination of the fluid through the uterus. Peritoneal adhesions, hematocele, misplacements of vagina or uterus should not be massaged, although it is possible that they may benefit indirectly from massage of a surrounding exudate.

Deutsche Med. Wochenschrift (Leipsic), February 21.

Combined Chloroform and Oxygen Narcosis. Wohlgemuth.—A stream of oxygen into which chloroform is introduced a drop at a time is brought into the mask, excluding ordinary air. Wohlgemuth asserts that the effect is to induce a perfect narcosis "which will banish chloroform death from the world." In 140 cases in which he has applied this improved technique the pulse remained absolutely normal all the time, always full and slow, even in anemic patients in profound narcosis. There were never any disturbances in breathing, nor cyanosis; the color of the face was normal, even the lips were bright red in all cases. The patients awoke rapidly, and with a clear consciousness in five to ten minutes. Other surgeons are testing the method so that a sufficient number of anesthesias will be attained ere long to afford a basis for comparison with other methods of narcosis.

Tuberculosis Hospitals. G. Kluge.—During the last four years Kluge has seen thirty healthy children become affected with tuberculosis in some form while a consumptive in their homes was disregarding all hygienic regulations to prevent infection of others. He urges legislation to enforce the removal of such inconsiderate sources of infection to some asylum, to protect the children in the home. Wilful disregard of the measures necessary to prevent injury to others should entail removal and isolation as inevitably as in the case of the insane.

Pflueger's Archiv f. Phys. (Bonn), January.

The Iodin in Iodothyrin. E. V. Cyon.—Thyreoglobulin is evidently the albuminoid substance that contains the iodothyrin complex in its molecule. The antagonism between the physiologic action of iodothyrin and of iodin on the vascular system is due to the iodin in some other combination in the thyroid gland. None of the other products of the gland possess the same properties as the iodothyrin, even although they may contain iodin.

Wiener Klin. Wochenschrift, February 21.

Cure of Incontinence by Paraffin. Kapsammer.—Three cases of incontinence of urine in women, due to laceration of the vagina and urethra or chronic cystitis, or dating from childhood, are reported by Kapsammer as cured by one or two injections of white vaselin—paraffin—6 c.c. at a time. The aim is to produce an artificial dam, similar to the prostate in man, around the urethral orifice. In Pfannenstiel's unfortunate experience the vaselin was injected in a ring, instead of in one spot, and he used a combination with a melting point of 45 C. Gersuny, the originator of the method, warns against using a vaselin with a melting point above 35 to 40 C. He injects it at a temperature such that it emerges from the needle in a worm, not in drops, and he always inserts the needle at the same spot, waiting a week between the injections. One other unpublished instance of embolism of the lungs has occurred in consequence of the injections, in the experience of a Vienna practitioner, but Gersuny states that he has never noted any inconveniences from the paraffin, in a constantly widening experience, even when the injections were made in the periproctal region or the orbit.

Gazzetta Degli Osp. (Milan), February 10 and 17.

Aspiration of Fluid in Acute Articular Rheumatism. F. Zagato.—The agonizing pains in the knee, in the course of acute rheumatic polyarthritis, were relieved instantaneously by inserting the small-sized needle of a Pravaz syringe and aspirating the fluid distending the capsule—about 60 c.c. The pains did not reappear, but the other knee required the same intervention in a few days. The operation was concluded by injecting a syringeful of a 2 per cent. solution of carbolic acid.

Electrotherapy in Exophthalmic Goiter. A. Lamari.—A severe case of exophthalmic goiter is described as clinically cured after forty applications of electricity to the vagus and cervical sympathetic.

St. Petersburg Med. Woch., February 16.

Belladonna in Intestinal Obstruction. E. Moritz.—For many years Moritz has been proclaiming the advantages to be derived from belladonna in the treatment of intestinal obstruction from any cause, and its superiority to all other medicinal measures. He administers by the mouth a pill of 1.5 mg of extract of belladonna, every four to six hours, until flatus passes. The first symptoms of transient intoxication appear after six to ten doses; dryness in the throat, agitation, sometimes delirium, but just before this point is reached the intestinal contents are evacuated, with no painful peristalsis nor vomiting. This treatment is applicable to all varieties of intestinal occlusion; can never do harm; sometimes removes the obstruction without further measures; untwists a slight volvulus; almost always relieves, and renders the conditions more favorable for operation if this becomes necessary. If fever persists after flatus passes, operation should not be delayed. He rejects atropin as too dangerous, but six physicians reported, last year in the *Muench. Med. Woch.* extremely favorable results obtained in severe cases of ileus by the subcutaneous injection of 1 to 5 mg. of atropin. In one case the patient was 80 years of age and recovered after injection of 1 and 3 mg. of atropin. Another patient died; the ileus in this case was consecutive to an operation on the fourth day of strangulated femoral hernia, and the physician is inclined to believe that a second injection might have saved the patient. [The last number of the same journal, February 19, describes another case in which the ileus must have been due to volvulus, as there had been no preceding constipation and the localization of the pain was in the left iliac region. The dose of 1 mg. had no effect, nor 1.5 mg. a few hours later. The fecal vomiting continued, but injection of 3 mg. the next day was followed in twenty minutes by flatus and copious evacuations. All traces of the slight intoxication from the atropin had passed away in twenty-four hours.—Ed.]

Change of Address.

J. D. Alston, 101 Maple St., Nashville, Tenn., to Box 108, Franklin, Tenn.
F. W. Bird, 2632 Locust St., St. Louis, Mo., to Poteau, I. T.
Bowman & Grieve, 1000 East Ann St., to 213 North Thayer St., Ann Arbor, Mich.
E. Burfield, Holyrood, Kan., to Ellndale, Kan.
J. H. Campbell, 618 Congress St., to 598 Van Buren St., Chicago, Ill.
D. D. Chapman, 3323 Laclede Ave., St. Louis, Mo., to Spencer, W. Va.
F. G. Cheek, Main St., Winston, N. C., to Chapel Hill, N. C.
V. S. Cheney, 2600 State St., flat 503, to 56 25th St., flat 3, Chicago, Ill.
R. S. Childs, Nashville, Tenn., to Box 79, Marlin, Tex.
Charles E. Codman, Spruce St., to 328 South 42d St., Philadelphia, Pa.
A. Cornelius, 130 West Randolph St., to 489 North Clark St., Chicago, Ill.
A. P. Delcourt, New Orleans, La., to School and Grimage Sts., Houma, La.
A. C. Denson, 263 Union St., Memphis, Tenn., to Fountain Hill, Ark.
L. W. Dukes, Nashville, Tenn., to Ocala, Fla.
H. A. Edwards, Sellers, S. C., to Latta, S. C.
H. C. Foster, 530 Ellis St., Augusta, Ga., to Ochlochonee, Ga.
J. D. Fowler, Nashville, Tenn., to Cornersville, Tenn.
B. F. Fulton, Nashville, Tenn., to Berryville, Miss.
E. J. Gray, Nashville, Tenn., to Tecumseh, O. T.
J. M. Greene, 1014 West Chestnut St., Louisville, Ky., to 740 Orient St., Medina, N. Y.
L. Hall, 1344 25th St., to 2309 Atkins St., Des Moines, Ia.
J. W. Heddens, 301 North 8th St., to 6th and Francis Sts., St. Joseph, Mo.
E. A. Hill, Wolf Summit, W. Va., to Salem, W. Va.
J. A. Hill, Lufkin, Tex., to Groveton, Tex.
W. T. Howard Jr., 88 Dorchester Ave., to Pathological Laboratory, Lakeside Hospital, Cleveland, Ohio.
M. C. Hughey, Memphis, Tenn., to Hiram, Mo.
A. Hymanson, 165 Henry St., to 232 Henry St., New York City.
F. T. Isbell, Memphis, Tenn., to Chapel Hill, Ark.
H. C. Johnson, Manawa, Wis., to Glen Flora, Wis.
De Witt Jordan, 319 North Delaware St., Indianapolis, Ind., to 710 Jackson St., Anderson, Ind.
W. T. Keener, 52 Randolph St., to 90 Wabash Ave., Chicago, Ill.
E. E. Kolor, 381 West 18th St., to 55 Fisk St., Chicago, Ill.
A. Leffingwell, Aurora on Cayuga Lake, N. Y., to Watkins, N. Y.
H. E. Luehrs, 328 South Hoyne Ave., to 623 West Monroe St., Chicago, Ill.
P. B. McCray, Nashville, Tenn., to 1105 Harrison St., Kansas City, Mo.
A. C. McCulley, Nashville, Tenn., to Oakland, Tenn.
E. L. McKinnie, Viola, Ill., to Room 9, Exchange Bank Bldg., Colorado Springs, Colo.
F. A. Moore, Memphis, Tenn., to Mahon, Miss.
V. O. Moore, 710 Starr Ave., to 1103 Starr Ave., Toledo, Ohio.
N. D. Polson, 5429 Washington Ave., to 676 Jackson Blvd., Chicago, Ill.
Ella N. Prescott, 1566 Canal St., New Orleans, La., to Box 33, Greensburg, La.
W. G. Trice, Waco, Tex., to Elk, Tex.
S. N. Quillin, Carp, Ind., to New Hamilton Bldg., Linton, Ind.
J. F. Shambs, 1062 Pearl St., to 255 Walton Ave., Cleveland, Ohio.
S. W. Staley, Charleston, S. C., to Liberty, N. C.
T. W. Stephens, Nashville, Tenn., to Shelbyville, Tenn.
C. C. Tallman, Silver Cross Hospital, to care Illinois Steel Company, Joliet, Ill.
J. E. Torrence, Presbyterian Hospital, Cincinnati, Ohio, to Hamilton, Ohio.
R. B. Touchstone, Memphis, Tenn., to Braxton, Miss.
E. J. Vogelsang, Windermere Place, to 4605 Delmar Ave., St. Louis, Mo.
A. T. Waring, Nashville, Tenn., to Cusseta, Tex.
W. R. Washburn, Hot Springs, Ark., to Sherman, Tex.

Queries and Minor Notes.

RECIPROCITY CONCERNING LICENSE.

Fairmount, Ind., Feb. 18, 1901.

To the Editor:—Can you inform me where I can obtain a copy of Dr. Paul Amberg's article entitled, "Present Status of Interstate Reciprocity Concerning License to Practice Medicine?"

A. H.

Ans.—In the *Medical News*, Nov. 3, 1900, a copy of which can be obtained through Lea Brothers & Co., New York City.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 21 to 27, 1901, inclusive:

George E. Bushnell, major and surgeon, U. S. A., sick leave of absence extended.

Marshall M. Cloud, lieutenant and asst.-Surgeon, U. S. A., sick leave of absence extended.

Francis G. Engelhardt, acting asst.-surgeon, from San Francisco, Cal., to Syracuse, N. Y., reporting by letter, on arrival, to the Surgeon-General for annulment of contract.

Joseph M. Heller, major and surgeon, Vols., to Fort Myer, Va., for duty with the squadron of the 5th Cavalry now under orders for the Philippines.

Deane C. Howard, captain and asst.-surgeon, U. S. A., leave of absence granted.

George J. Newgarden, captain and asst.-surgeon, U. S. A., sick leave of absence extended.

Joseph C. Reifsnyder, acting asst-surgeon, member of a board at West Point, N. Y., to examine candidates for admission to the U. S. Military Academy, vice Lieut. Franklin M. Kemp, asst.-surgeon, U. S. A., relieved.

Frederick P. Reynolds, major and surgeon, Vols., relieved from further duty in the Division of the Philippines and assigned to duty at the U. S. General Hospital, Washington Barracks, D. C.

Ira A. Shimer, lieutenant and asst.-surgeon, Vols., from the Department of Cuba to duty at Fort McHenry, Md.

Alexander N. Stark, major and surgeon, Vols., from the Department of Cuba to duty at Fort McHenry, Md.

Roy A. Wilson, acting asst.-surgeon, from Fort Totten, N. Y., to Fort Ethan Allen, Vt., to accompany the squadron of the 5th Cavalry to be sent from that post to Fort Grant, Ariz.; thereafter to return to his proper station.

Robert H. Zauner, acting asst.-surgeon, from Fort Du Pont, Del., to Columbus Barracks, Ohio, for temporary duty.

Navy Changes.

Changes in the Medical Corps of the Navy for week ended March 2, 1901:

Surgeon G. Pickrell, detached from the Cavite Naval Station, and ordered to the Mare Island Navy Yard.

Asst.-Surgeon J. C. Thompson, detached from the *Solace*, and ordered home to wait orders.

Surgeon A. R. Wentworth, detached from the *Independence*, and ordered to the *Solace*.

Surgeon F. J. B. Corderio, detached from the *New Orleans*, and ordered home via the *Buffalo*.

Surgeon C. F. Stokes, detached from the *Buffalo*, and ordered to the *New Orleans*.

Medical Inspector F. Rogers, detached from recruiting duty and ordered to the Asiatic Station, as fleet surgeon.

Medical Inspector R. C. Persons, detached from duty as fleet surgeon of the Asiatic Station, and home to wait orders.

Surgeon W. H. Rush, retired, detached from the Pensacola Navy Yard, and ordered home.

Health Reports.

The following cases of smallpox, yellow fever and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended March 2, 1901:

SMALLPOX—UNITED STATES.

Alabama: Mobile, Feb. 16-23, 1 death.

California: Los Angeles, Feb. 9-16, 1 case.

District of Columbia: Washington, Feb. 2-23, 12 cases.

Florida: Jacksonville, Feb. 16-23, 3 cases.

Illinois: Chicago, Feb. 16-23, 10 cases.

Indiana: Delaware County, Feb. 2, 1 case.

Kansas: Lawrence, Feb. 8-16, 1 case; Wichita, Feb. 16-23, 8 cases.

Kentucky: Lexington, Feb. 8-23, 3 cases.

Louisiana: New Orleans, Feb. 16-23, 14 cases, 3 deaths; Shreveport, Feb. 16-23, 2 cases.

Maryland Baltimore, Feb. 16-23, 1 case.

Michigan: West Bay City, Feb. 8-23, 2 cases.

Minnesota: Minneapolis, Feb. 8-23, 15 cases; Winona, Feb. 16-23, 13 cases.

Missouri: St. Joseph, Jan. 1-31, 34 cases, 1 death.

Nebraska: Omaha, Feb. 8-23, 12 cases.

New Hampshire: Manchester, Feb. 16-23, 30 cases.

New Jersey: Newark, Feb. 8-26, 3 cases.

New York: New York City, Feb. 16-23, 43 cases, 9 deaths.

Ohio: Ashtabula, Feb. 16-23, 3 cases; Cincinnati, Feb. 15-22, 3 cases; Cleveland, Feb. 16-23, 48 cases.

Pennsylvania: Erie, Feb. 16-23, 1 case; Pittsburg, Feb. 16-23, 3 cases; Steelton, Feb. 16-23, 1 case.

South Carolina: Greenville, Feb. 16-23, 2 cases.

Tennessee: Memphis, Feb. 16-23, 21 cases; Nashville, Feb. 16-23, 6 cases.

Texas: Galveston, to Feb. 16, 123 cases.

Utah: Salt Lake City, Feb. 8-23, 46 cases, 1 death.

West Virginia: Huntington, Feb. 16-23, 1 case.

SMALLPOX—FOREIGN AND INSULAR.

Austria: Prague, Jan. 26-Feb. 9, 17 cases.

Belgium: Antwerp, Jan. 26-Feb. 2, 1 case; Ghent, Jan. 19-26, 1 death.

Brazil: Bahia, Jan. 19-26, 3 cases; Pernambuco, Dec. 17-Jan 15, 62 deaths; Rio de Janeiro, Dec. 16-Jan. 15, 39 deaths.

Ceylon: Colombo, Jan. 6-12, 1 case, 1 death.

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India: Bombay, Jan. 15-27, 9 deaths; Calcutta, Jan. 12-26, 186 deaths; Karachi, Jan. 13-27, 22 cases, 14 deaths; Madras, Jan. 15, 6 deaths.

Mexico: City of Mexico, Feb. 1-16, 4 deaths.

Netherlands: Rotterdam, Feb. 8-16, 1 case.

Porto Rico: Ponce, Feb. 1-10, 32 cases.

Russia: Moscow, Jan 19-Feb. 2, 17 cases, 2 deaths; Odessa, Jan. 26-Feb. 9, 35 cases, 13 deaths; St. Petersburg, Jan. 26-Feb. 2, 1 case; Warsaw, Jan. 19-26, 12 deaths.

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The Journal of the
American Medical Association

Vol. XXXVI. CHICAGO, ILLINOIS, MARCH 23, 1901. No. 12.

Original Articles.

ELBOW FRACTURES AND THE X-RAY.[*]

W. W. GRANT, M.D.
Surgeon, C. R. I. & P. R. R., and Consulting Surgeon, U. P. Ry.
DENVER, COLO.

There are, no doubt, those who think we have reached the highest excellence in the treatment of most fractures, but none who are familiar with the treatment and results of elbow fractures and *x*-ray disclosures will be deluded by the brilliant achievements of this surgical age. There are still more things in surgery and medicine than are dreamt of in our philosophy. My purpose is to present for consideration some mooted questions in the treatment of these elbow injuries and the importance of the facts disclosed by the *x*-ray in the future treatment of fractures.

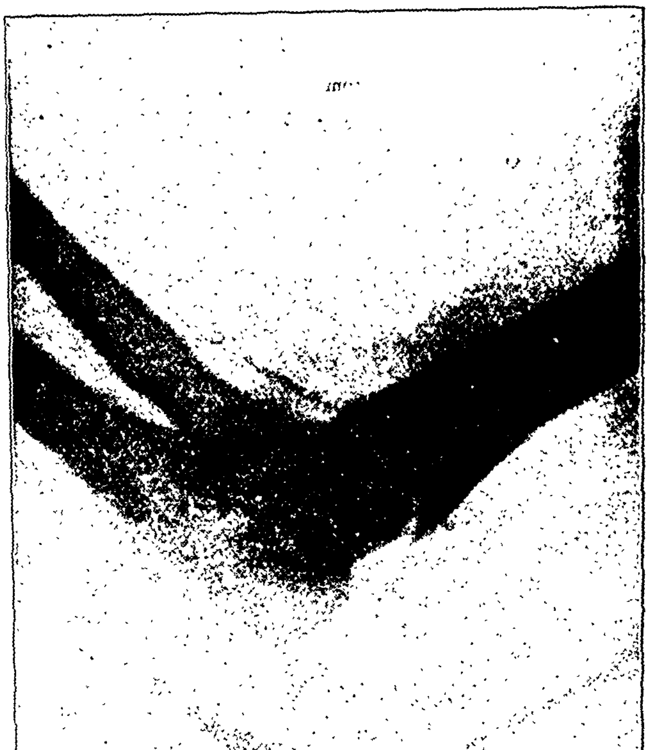
Allis, years ago, called attention to the importance of maintaining the normal angle of the humerus and ulna in the treatment of fractures of the lower end of the humerus, because of its influence on the carrying function of the arm. He treats the arm in extension because he believes it best maintains the fragments and the normal angle. This angle is greater than many suspect. With the arm extended in supination, a line drawn from the head of the humerus between the tuberosities will meet a transverse line through the carpus two inches inside of the styloid process of the ulna, which is the measure of the outward deviation of the forearm. If, in the adjustment of the fragments, the articular surfaces do not conform to this angle, the carrying power will be diminished. In any position with imperfect coaptation of fragments anchylosis is more certain. The assertion of Stimson that upward displacement of the internal condyle one-fourth of an inch will destroy the normal angle of deflection at the elbow is in itself a strong plea for more radical and reliable treatment in many of these cases

The maintenance of perfect coaptation of the fragments is not only difficult, but almost impossible without cutting down on the fragments and fixing them by wire or screws or clamp. The great majority of surgeons treat fractures of the condyles and supracondyloid with the arm at a right or acute angle. A few, conspicuously Allis and Roberts, prefer the arm in complete extension, believing that anchylosis is not so common. I have not treated these fractures in extension nor by operation, except compound, but I have seen more cases of anchylosis in this than in the flexed position.

Unlike most fractures, a perfectly accurate adjustment and coaptation of the fragments seem necessary to a perfect functional result. This object is so difficult of attainment that if more satisfactory and perfect results can be safely obtained by operative means the time has come when it should be more generally adopted.

I have two cases, with skiagraphs, which I desire to report as pertinent to the discussion.

Mrs. M., aged 65, fell on the sidewalk in May, 1898, producing a supracondyloid fracture of the humerus. The line of fracture, as shown by the skiagraph, traversed the upper border of the coronoid and olecranon fossæ. It did not seem difficult to replace and to maintain the fragments. The two skiagrams taken on the second and seventh day show that the fragments were not retained in as good position as desired. There was splintering of the upper fragment posteriorly. The fragments were adjusted three times and the arm kept at a right angle in long posterior and short anterior splints. While flexion and extension are not perfect, the functional result is good. The fact that she can feed herself and dress her hair with ease is sufficient attestation of the fact. She experiences no discomfort nor inconvenience in its use. It is difficult to prevent rotation of the lower fragment in these cases.



Case 1.—Supracondyloid fracture of right humerus.

Except with a laboring person, the evil of the gunstock position as to the impairment of the carrying function is much exaggerated.

Union, with as much overlapping as indicated, is a mechanical impediment to perfect flexion. Cheyne and

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[*] Read at the Annual Meeting of the American Academy of Railway Surgeons, held at St. Paul, Minn., Sept. 5 and 6, 1900.

George J. Newgarden, captain and asst.-surgeon, U. S. A., sick leave of absence extended.

Joseph C. Reifsnyder, acting asst-surgeon, member of a board at West Point, N. Y., to examine candidates for admission to the U. S. Military Academy, vice Lieut. Franklin M. Kemp, asst.-surgeon, U. S. A., relieved.

Frederick P. Reynolds, major and surgeon, Vols., relieved from further duty in the Division of the Philippines and assigned to duty at the U. S. General Hospital, Washington Barracks, D. C.

Ira A. Shimer, lieutenant and asst.-surgeon, Vols., from the Department of Cuba to duty at Fort McHenry, Md.

Alexander N. Stark, major and surgeon, Vols., from the Department of Cuba to duty at Fort McHenry, Md.

Roy A. Wilson, acting asst.-surgeon, from Fort Totten, N. Y., to Fort Ethan Allen, Vt., to accompany the squadron of the 5th Cavalry to be sent from that post to Fort Grant, Ariz.; thereafter to return to his proper station.

Robert H. Zauner, acting asst.-surgeon, from Fort Du Pont, Del., to Columbus Barracks, Ohio, for temporary duty.

Navy Changes.

Changes in the Medical Corps of the Navy for week ended March 2, 1901:

Surgeon G. Pickrell, detached from the Cavite Naval Station, and ordered to the Mare Island Navy Yard.

Asst.-Surgeon J. C. Thompson, detached from the *Solace*, and ordered home to wait orders.

Surgeon A. R. Wentworth, detached from the *Independence*, and ordered to the *Solace*.

Surgeon F. J. B. Corderio, detached from the *New Orleans*, and ordered home via the *Buffalo*.

Surgeon C. F. Stokes, detached from the *Buffalo*, and ordered to the *New Orleans*.

Medical Inspector F. Rogers, detached from recruiting duty and ordered to the Asiatic Station, as fleet surgeon.

Medical Inspector R. C. Persons, detached from duty as fleet surgeon of the Asiatic Station, and home to wait orders.

Surgeon W. H. Rush, retired, detached from the Pensacola Navy Yard, and ordered home.

Health Reports.

The following cases of smallpox, yellow fever and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended March 2, 1901:

SMALLPOX—UNITED STATES.

Alabama: Mobile, Feb. 16-23, 1 death.

California: Los Angeles, Feb. 9-16, 1 case.

District of Columbia: Washington, Feb. 2-23, 12 cases.

Florida: Jacksonville, Feb. 16-23, 3 cases.

Illinois: Chicago, Feb. 16-23, 10 cases.

Indiana: Delaware County, Feb. 2, 1 case.

Kansas: Lawrence, Feb. 8-16, 1 case; Wichita, Feb. 16-23, 8 cases.

Kentucky: Lexington, Feb. 8-23, 3 cases.

Louisiana: New Orleans, Feb. 16-23, 14 cases, 3 deaths; Shreveport, Feb. 16-23, 2 cases.

Maryland Baltimore, Feb. 16-23, 1 case.

Michigan: West Bay City, Feb. 8-23, 2 cases.

Minnesota: Minneapolis, Feb. 8-23, 15 cases; Winona, Feb. 16-23, 13 cases.

Missouri: St. Joseph, Jan. 1-31, 34 cases, 1 death.

Nebraska: Omaha, Feb. 8-23, 12 cases.

New Hampshire: Manchester, Feb. 16-23, 30 cases.

New Jersey: Newark, Feb. 8-26, 3 cases.

New York: New York City, Feb. 16-23, 43 cases, 9 deaths.

Ohio: Ashtabula, Feb. 16-23, 3 cases; Cincinnati, Feb. 15-22, 3 cases; Cleveland, Feb. 16-23, 48 cases.

Pennsylvania: Erie, Feb. 16-23, 1 case; Pittsburg, Feb. 16-23, 3 cases; Steelton, Feb. 16-23, 1 case.

South Carolina: Greenville, Feb. 16-23, 2 cases.

Tennessee: Memphis, Feb. 16-23, 21 cases; Nashville, Feb. 16-23, 6 cases.

Texas: Galveston, to Feb. 16, 123 cases.

Utah: Salt Lake City, Feb. 8-23, 46 cases, 1 death.

West Virginia: Huntington, Feb. 16-23, 1 case.

SMALLPOX—FOREIGN AND INSULAR.

Austria: Prague, Jan. 26-Feb. 9, 17 cases.

Belgium: Antwerp, Jan. 26-Feb. 2, 1 case; Ghent, Jan. 19-26, 1 death.

Brazil: Bahia, Jan. 19-26, 3 cases; Pernambuco, Dec. 17-Jan. 15, 62 deaths; Rio de Janeiro, Dec. 16-Jan. 15, 39 deaths.

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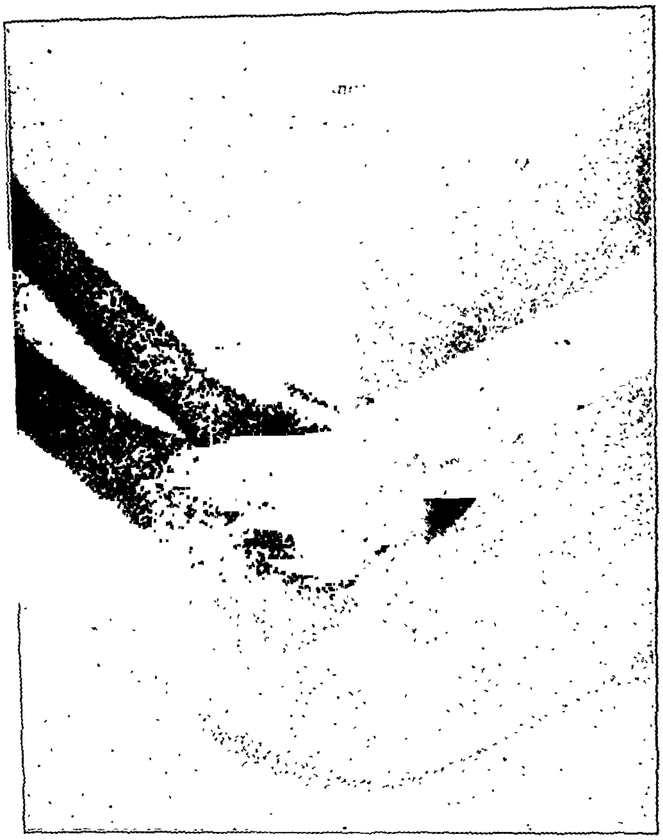

Case 1.—Supracondyloid fracture of right humerus.

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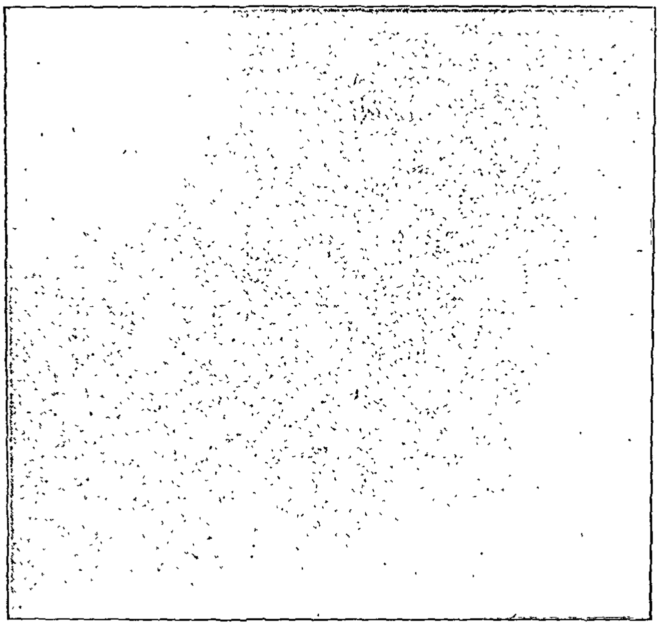
* Read at the Annual *Meeting* of the American Academy of Railway Surgeons, held at St. Paul, Minn., Sept. 5 and 6, 1900.

Burghard suggest that this defect may be overcome by treating the arm in acute flexion with a compress over the upper fragment. As most surgeons believe that the action of triceps and brachialis influences the position of the lower fragment, I may suggest that as no position will relax both, tenotomy is appropriate and sometimes useful.



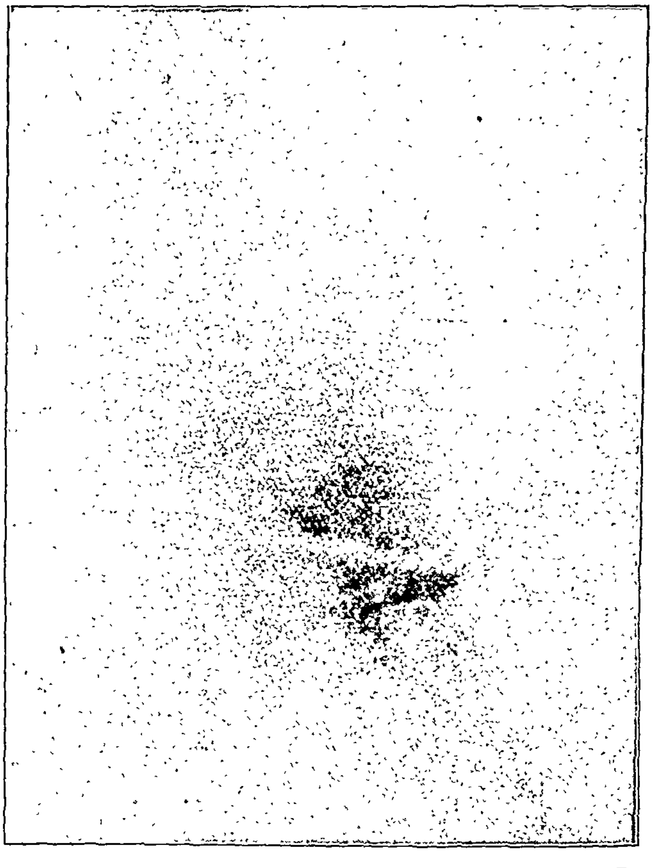
Case 1.—Mrs. M., October, 1900, three years and three months after injury. Arm looks well. Considerable antero-posterior thickening due to splintering, callus and undue prominence of upper fragment anteriorly with rotation of trochlea.

Case 2.—M. M. Y., aged 40, a brakeman, was, on June 21, 1900, on top of a refrigerator car with his legs in the ice chamber when the car went off the track and, throwing him against the side of the ice chamber, fractured the internal condyle of the left humerus, involving the joint freely. I saw him twelve hours after, when the parts were greatly swollen, making a satisfactory examination difficult even under chloroform. Four days later a skiagraph by Dr. Stover showed the fragments with the condyle displaced upward. The swelling was now much reduced, and under chloroform the fragment was easily adjusted and the arm treated at a right angle throughout. It was examined two or three times a week, but passive motion was not used until the end of the third week when union was quite good. At the end of two months he was engaged in light work and flexion and extension were very good and steadily improving. A skiagraph three months later, September 19, showed good union and excellent position of the fragments.

Case 1.—Mrs. M., October, 1900, three years and three months after injury. Longer exposure to x-ray. Callus not so well shown. Solid union; functional result very good.

Some recent writers maintain that the coaptation of the condyles can only be securely maintained by cutting down on the condyles and wiring or nailing the fragments, and that this is the best method of treatment, while most surgeons would treat them with bandages and splints in flexion, a few in extension.

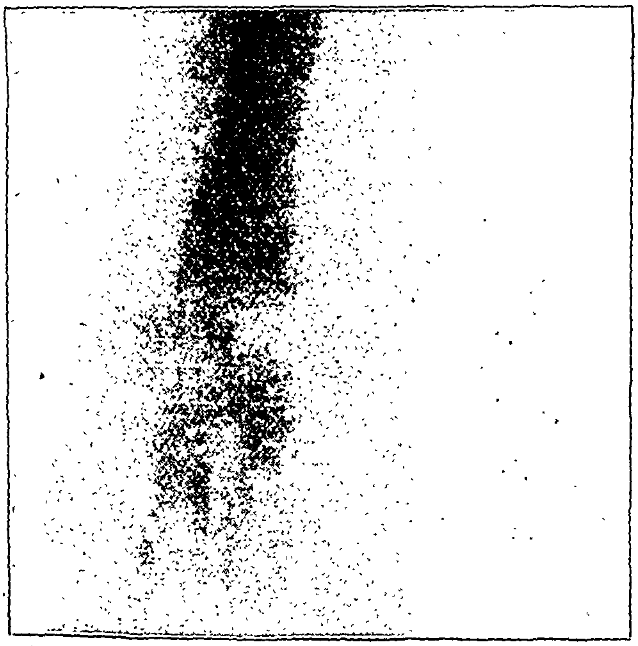
There are some general considerations of special interest that might with propriety be mentioned in this connection as determining general conclusions:



Case 2.—M. M. Y., posterior view June 23, fourth day. Readjusted immediately after.

Anchylosis is due to misplaced fragments, and when in position should not be endangered by manipulation. Rubbing and gentle massage of the muscles may be used in a week. It is important in feeble subjects, but care should be exercised not to disturb the joint and fragments, as rest is the important principle in the treatment of any fracture and of the greatest value in acute joint troubles.

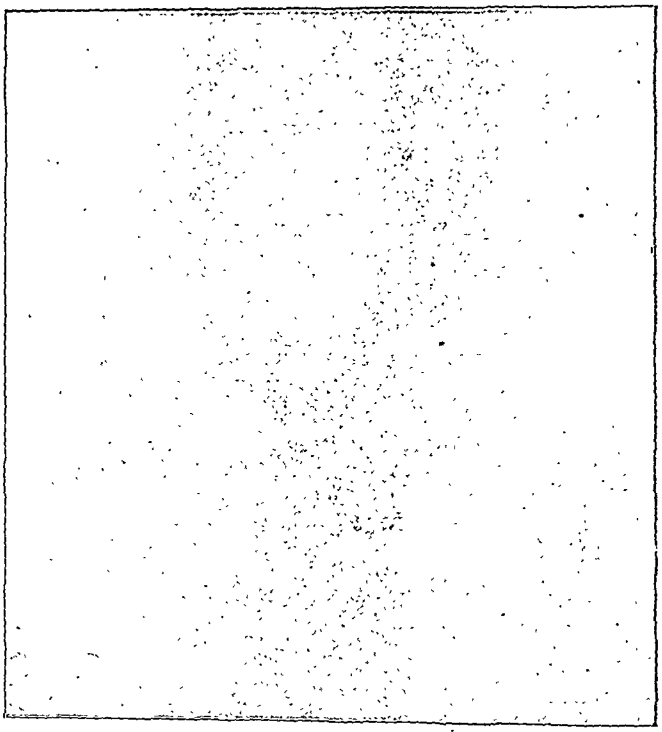
The real status of the x-ray is yet to be determined, though its use in surgery is one of the distinct scientific advances of our time. I fear we are prone to rely too exclusively on instruments of real or supposed demonstrable scientific precision which do not appeal to the exercise of our own analytic judgment and surgical acumen. There is danger that improvements in specialization may dull our sensibilities and, to an unfortunate extent, limit our accomplishments in methods of investigation and diagnosis. In the location of foreign bodies its value is unquestioned. In the diagnosis of fractures its use is not so important nor its benefits so pronounced. In demonstrating the position of the fragments it is more useful, yet often inaccurate, and therefore unreliable, and dangerous to the surgeon because it exaggerates the malposition of the fragments, the deformity and the impairment of the limb. The functional results are much better than the skiagram would indicate as possible. This is well illustrated in the skiagram presented of an oblique fracture of the femur in a child 9 years old. The accident occurred April 21, 1900, by the child falling down a mine shaft. One month later she was placed in my charge, and at that time the skiagraph was taken. Repeated and careful measurements showed that the shortening did not exceed three-fourths of an inch, and this was partly due to the bend or distorted axis of the limb. I call attention to the apparent extreme overlapping of the fragments. The light shadow represents the temporary callus. The distinction is highly important. Imagine the influence of such a picture on a patient or a jury. As the father in this case expressed it in a letter to me: "It was about as bad a jumbled up leg" as he ever saw. It might have been better, but the functional result is good. She was treated by an intelligent young surgeon who noted great difficulty in controlling the child's movements and the position of the limb, though it is quite natural and, to all external appearances, the result is excellent.



Case 2.—M. M. Y., September 19, three months after injury. Good union and position of fragment.

The other skiagraph, made by Stover, of Denver, one year ago, represents an oblique fracture of both the tibia and fibula about the middle. It is the case of a Boston woman who was treated by a Boston surgeon. It is a unique and extremely interesting specimen and appropriate to this discussion. It will be observed that while the tibial fragments are not perfectly adjusted, yet union is good; but the chief interest is in the fibula. The upper end of the lower fragment was undoubtedly driven against the tibia when the accident occurred, was never replaced, and is united to the tibial fragments, while the upper fragment is not in contact with any other, and therefore is ununited. The contour of the leg is perfect and the patient uses it even in dancing with comfort and pleasure. The position looks bad, but I believe it a safe assertion that the fragment could never have been replaced without cutting down on it and adjusting by the application of force.

Such a demonstration is significant. Mr. Lane,[1] of London, maintained, with much plausibility, that muscular action in displacing and preventing the satisfactory adjustment of fractures is greatly overestimated by surgeons: "That spasmodic muscular contraction exerts no appreciable influence on the fragments and may be left out of consideration in the treatment; that at best its opposition to replacement in the early period is only slight and transitory; that the obstacles to perfect adjustment are effusion of blood and inflammatory products about the fragments, and that we are unable to restore the bones to their normal form by means of manipulation and splints." While these remarks are specially applicable to Pott's fracture and to oblique fractures of the long bones, and, I may add, to the lower jaw, it will be a distinct advance when operation is resorted to when the fragments can not be satisfactorily adjusted and maintained by other means. In compound fractures there should be no ground for controversy. In others the question has only excited serious general consideration in reference to fracture of the patella, and the great majority of surgeons prefer nonoperative methods. But if worthy of serious notice concerning a fracture that frequently involves an important joint, what serious objection can be used to its application in fractures which never involve a joint, and where, should infection occur, it is not likely to prove so serious. Infection is the only danger, but with confidence in the established tenets of modern surgery in reference to bacteriology we do not hesitate to expose the abdominal and every other cavity with impunity, and why not broken bones.



Fracture of both bones of leg. Note symmetry of fleshy outline.

With due allowance for its defects and dangers, the x-ray has made new conditions and imposed new demands and responsibilities on the surgeon. Do not the medicolegal aspects of the question, as well as practical results, indicate the necessity or desirability of more radical methods in the treatment of certain oblique and joint fractures? If both are put on a sounder and safer basis, this must be answered in the affirmative.

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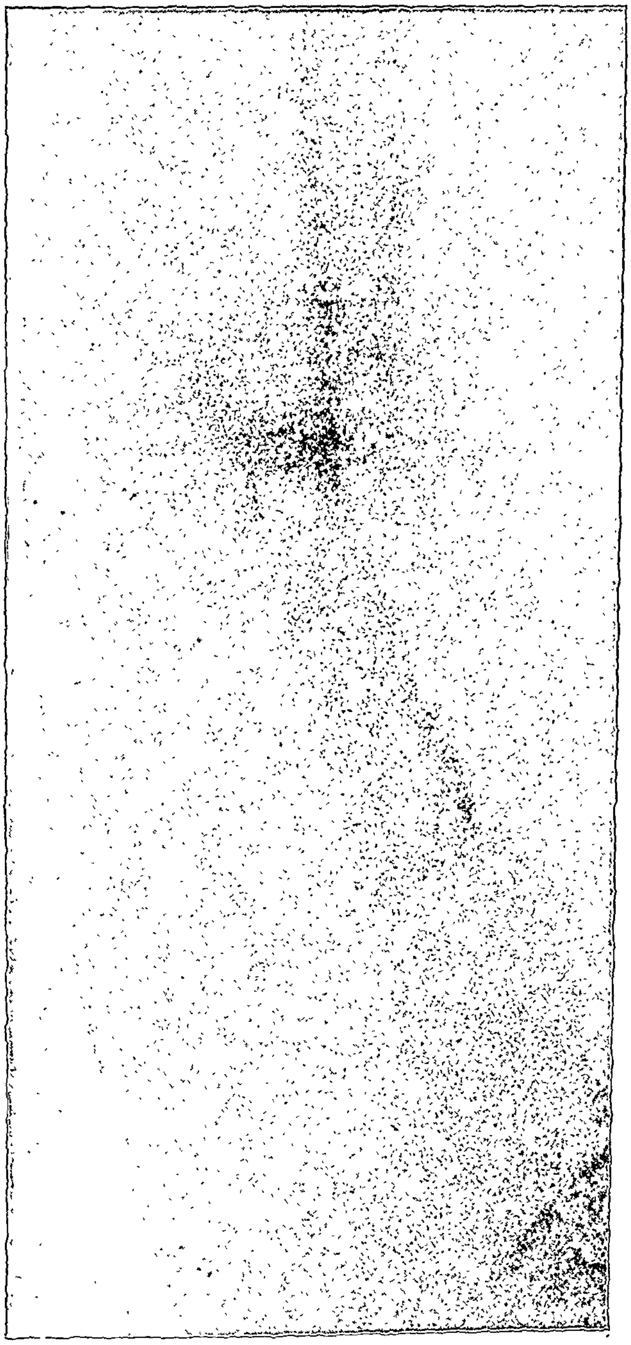
[1] Lane Lectures, 1897.

The only way to more certainly maintain the accurate coaptation of the fragments is to immobilize them by silver wire, screw, nail or clamp, but only under the most approved aseptic conditions. In the absence of infection the results must be better. This department of surgery has not been met with the courage and skill that has been so manifest in other fields, and it is too important not to receive the serious attention it deserves.



Fracture of Thigh. Posterior View.

Carl Beck[2] says, in reference to skiagraphs, that there are injuries, the correct interpretation of which presupposes, besides thorough anatomic knowledge, the greatest care and a vast amount of experience as to the different modes of delineation in various projection planes.

The greatest diagnostic difficulties are offered by the joints. With a distinct skiagraphic plate, taken under improved scientific conditions, it should, he avers, with expert clinical and anatomic knowledge, be evidence in court.

The *Annals of Surgery* for August contains an elaborate scientific paper by Cotton, of Boston, on the "Pathology of Fractures of Lower End of Radius." In reference to the Roentgen ray, he says: "It may be said in advance that there seems to be no single form of lesion described from any actual specimen which is susceptible of demonstration in the shadow picture that has not been demonstrated in one or more clinical cases; nor has the x-ray discovered any previously undescribed lesion. . . . It needs no argument to show that the x-ray plate, valuable as it is, is in many ways rather an *imperfect record*."

The American Surgical Association, at its last annual meeting, in May, by unanimous vote passed a resolution that the skiagraph is inadmissible as evidence in court, because, being a picture of a shadow and not of the object, it is inaccurate and unreliable.

The only tenable conclusion, it seems to me, is that the skiagraph should never be used as the determining factor in regard to the existence and pathology of fractures, but may be, in honest and capable surgical hands only, used to supplement or confirm opinions reached without it. It must always be a condition that the electrician is equally honest and competent. The illustrations and facts familiar to surgeons show beyond a doubt how unjust and indefensible a conclusion must be, in or out of court, that is based solely or chiefly on the appearances of the skiagraph.

GENERAL BODILY RESISTANCE AS A FACTOR IN NOSE AND THROAT DISEASE.*

FRANK LOUIS STILLMAN, M.D.
COLUMBUS, OHIO.

Good health is sometimes regained after the organism has been long below par, but in these cases there does not seem to be as much surplus to draw on as in those cases in which there is an exuberant vitality—in which, with a heritage of good health to start with, there has been a continued triumph of health and resistance over the encroachments of disease. It is this tendency of repeated small attacks of sickness acting as a drag upon the natural tendency of the body toward health that should be carefully watched by the physician. For example, a cold in the head is not generally considered a very dangerous thing, but frequently recurring colds in the head will lead to lack of resiliency in the parts affected that may gradually lead to chronicity.

The majority of the cases coming under the care of a throat specialist are chronic, and the treatment generally aims to remove the effects of some long-continued morbid action. It is a fact that most chronic affections of the upper respiratory tract are notoriously difficult to cure by medication, either local or general. The great advances in the specialty came when surgical means were perfected whereby good ventilation and drainage could be secured. These improved methods of treatment, which were forwarded greatly by the discovery of cocain, almost revolutionized the practice of the art, and now the percentage of cases that can be relieved is high. Still there are certain classes or stages of these troubles which either are not amenable to surgical treatment or are liable to recurrence—and here is where our wisest forethought has its play.

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[2] Med. Record, N. Y., Aug. 25, 1900.

* Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

Chronologically, at least, heredity has more influence upon bodily resistance than anything else. Evolution teaches us that physical types are transmitted. Sometimes particular family stocks seem to have greater immunity to certain diseases than others. In the case of infectious diseases this might be accounted for by saying that the soil had become exhausted and is not suitable for the growth of certain bacteria. It is like the well-observed fact that yeast will not propagate in well-fermented bread or wine. In ordinary cases it is reasonable to believe that if one's ancestors lived in such an environment as to induce good health in themselves, in all probability their descendants would inherit physiques which would make their bodies more likely to withstand morbific influences. On the other hand, "the sins of the fathers will be visited upon the children," and their omissions and commissions will be evidenced in their descendants by that which we call lessened resistance. Because your great grandfather was fond of a certain brand of wine is the cause of your tendency to sore throat. This is a rather devious course of reasoning, but thus Nature does her work.

We would all choose healthy ancestors if we could, but as that is impossible—except when selecting a family coat of arms—we can do the next best thing and select as suitable an environment as possible; and, after all, this is almost as important as a healthy ancestry. I am not prepared to question the fact that in many of the diseases of the upper respiratory tract the most brilliant results are brought to pass through means almost purely surgical; still, of the great mass of these diseases treated, attention to the patient's environment is the most vital point in giving genuine relief. By environment is meant the sum of the surroundings and conditions. Used in this sense it would include the patient's food, habits and hygiene—in fact everything, other than the patient himself, which has an influence upon the local condition. This would include all extraneous matters that tend to promote health. Used in this sense the environment is facile princeps, but it should not be forgotten that drugs used for their general and local action are nearly always necessary as adjuvants to other directions and advice.

There are good reasons why repeated acute attacks of coryza, and repeated engorgement of the local lymphatic glandular structures lead to hypertrophic conditions. There are good reasons also why these repetitions occur at short intervals in some individuals and at long intervals in others. Things do not come by chance, and in these patients who are such an easy prey to local disease there must be some type of constitution either hereditary or acquired, or both, to account for their susceptibility.

Because the lessened general resistance which causes this susceptibility acts so often through the nervous system, and because the nervous affections of the nose are intrinsically of such interest when studied from the standpoint of this paper, one or two of them will be used as illustrations. We will speak of the group of reflex nasal diseases in which the irritation seems to be centripetal, and of hyperesthetic rhinitis, in which the irritation manifests itself centrifugally.

In regard to the so-called reflexes which are caused by pressure points within the nose, it has always seemed to me that the general system was more at fault than the nose. The nervous system of the patient had lost its nice adjustment, so that irritation at the periphery is manifested in some other region as reflex disturbance. It is recognized that the cause in the nose is only slight, but it is just sufficient to disturb the balance in a nervous system which has all but lost its poise. It will most often be found that individuals suffering from these reflexes are manifestly of a neurotic type, and although the existing malady is relieved by removing the peripheral cause, it will be found that the nervous instability still exists, and likely will evidence itself in other directions. In this class of cases it is important not to saw off a spur in the nose and assume that the patient is thereby cured, but by reconstructive treatment build up and regenerate. If this spur was causing asthma, or hay-fever, or tic douloureux, there is further work for the physician, even though the symptoms are relieved—for the general resistance of the patient must be improved or he will have headaches from some eye-strain, will have prolonged brachycardia after he has the grip—or some other ailment of like nature.

There is another type of nasal disease, the hyperesthetic, in which it is necessary to increase the tone of the nervous system before much improvement begins. The cases are somewhat similar in their manifestations to hay-fever, but do not seem to be influenced by season. In my experience the disease occurs most often in anemic individuals who have confining occupations and are suffering from some constant worry. These cases, like their near relative, hay-fever, undoubtedly evidence some positive interference with metabolism. Uric acid seems to be retained in most of them, but whether this is a cause or an effect, the lithemia improves as the patient gets better. Tonics, sunlight, less introspection will cure some of these cases, which are very baffling when treated by local medical and surgical means only.

The physician who treats diseases of the nose and throat should not be so narrow as to treat the local trouble by local remedies only. Æsop tells a fable of the members trying to boycott the body, but to their surprise they found that they suffered to as great a degree. The withholding of nourishment from the body caused not only emaciation of the body, but also caused other parts to be equal sharers in the calamity. It is a rule that works both ways. If the body had attempted to boycott the members, it would have had meted out to itself the same degree of suffering. I have seen many cases of chronic pharyngitis much benefited by the patient abstaining from alcohol or tobacco, and excessive taking of sweets will often so disturb metabolism as to cause a pharyngitis and tumescence of the turbinated bodies. Change of habits in this regard has led to relief of the local trouble. These are very familiar causes of disturbance here, but frequently other causes may be found, the removal of which will lead to just as satisfactory a result.

I wish to make a plea for a practical application of these facts. Not only should the patient coming to us with these local troubles be given instructions in hygiene, etc., in order to more surely throw off the local ailment, but one should make it a constant study to notice and consider his patient's mode of life and environment, and strive to be ready with advice that will forestall trouble.

In order to intelligently give the patient other than local treatment the specialist should always remember that he is physician first and specialist afterward. He should inquire carefully into the patient's family and personal history, the course of the present disease; and, except in cases which he knows can be permanently cured surgically, he should bring to his aid all the modern means of questioning the body. To do this methodically he should have minute notes of his cases. The card system is most convenient, and in private practice the financial account of the patient can be kept on the back of the case card appropriately ruled for that purpose. This will make it necessary to use and refer to the card at each visit and thus keep in touch with every phase of the local and general condition.

It sometimes requires close questioning of a patient to find just how he is transgressing the laws of health. The young lady eats "only a little candy now and then," but if you should happen to have her sweetheart as a patient during the same period, a little sympathetic questioning may bring out the fact that he is furnishing her 5-pound boxes of bonbons at more or less frequent intervals. Then your "moderate drinker" and your "moderate smoker" and your "slow and small eater" sometimes evidence an astonishing atrophy of their sense of perspective, and you may find upon going somewhat into statistical detail that they surely look at the things they consume and the faults which they have through the large end of a telescope. It is often a good deal of bother when we are busy to go into these minute and harassing details, but by so doing we put the practice of medicine and its legitimate branches upon a higher plane.

When the body at large requires treatment it is preferably administered by the laryngologist, especially when it can be done concurrently with the local treatment, but in some cases it is well to put the treatment into other hands. When so much depends upon relieving disturbances of metabolism and in keeping the whole body in a healthy condition, we surely are not doing the best for our patient if he is not given the benefit of modern appliances to secure these ends. While the specialist can not, and may not, limit himself to local work only, it is incumbent upon him to realize that some general treatments can be carried out better in other hands. He can not be expected to have the armamentaria needed for some cases; time does not permit him to become thoroughly conversant with all the kaleidoscopic changes in the whole field of medicine, and if he believes that some one else is better fitted to cure the general disturbance, the patient should be referred.

Prevention of chronicity, prevention of formation of hyperplasia, will save a train of complications which may mar the patient's future life. After many of the glands of the mucous membrane have been almost destroyed by chronic inflammation, after the function of an ear has been almost destroyed by chronic purulent otitis media, some relief can be given by modern treatment, but it is a make-shift after all. The glands can be stimulated to do twice the work they were intended to do and thus help out their shriveled companions, and the carious bone can be scooped out of the ear, but probably there was a time in the history of each of these cases when enlightened and conscientious oversight might have abolished the causes that led to these sequelæ. If we believe that heredity has something to do with these cases it is all the more important to prevent chronicity and recurrences; for then we are doing what we can to improve the type, and are building for the welfare of this patient's prospective descendents. Any good accomplished in any line of work is never in vain.

Ocular Disturbances from Thyroid Treatment.—The *Semaine Med.* mentions that two Belgian physicians have recently reported a few cases of optic neuritis or asthenopia as the only indication of intolerance of thyroid treatment. The ocular troubles subsided on suspension of the treatment.

SYSTEMIC FACTORS IN CATARRHAL DEAFNESS.*

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Chronic nonsuppurative inflammation of the middle ear by its very location is a most difficult disease to treat; and when we add to this the fact that it is rare for any of these patients to come to us until the disease is of several years' standing, we do not wonder that a doubtful prognosis has been the rule in the past, but if we are to call ourselves specialists, is it to our credit that we should sit calmly down and accept defeat, with our present facilities for reaching the deeper parts of the head?

Without frequent exacerbations an inflamed mucous membrane, even in the most advanced chronic form, is not beyond relief and practical cure. The number of our cases of catarrhal deafness where more than this simple inflammation obtains and the deeper labyrinthine structures are involved, is very small indeed; so what is our proposition but a simple one if gauged by some of the complex and serious problems that confront men in other specialties?

If the middle-ear trouble be in the earlier stages, what will do it more good than free and normal ventilation? Close the vestibule of one nostril and see how soon you will have a congested state of the membranes; open the vestibule and see how soon normal ventilation will restore health to the parts.

If the middle-ear affection has gone further and the ossicular chain is hampered by products of inflammation, what will assist their absorption quicker than that the parts be again bathed with a normal supply of air? What will limber up its stiffened joints better than the mild stimulation and passive motion produced by the well-known application of camphor and iodin vapor[1] puffed into the tympanic cavity? Stimulative treatment of this kind, by reason of its effect on products of inflammation and ossicular mobility, acts with practical certainty in benefiting the hearing. All this can be attained and maintained if the little Eustachian tube, not more than two inches long, be kept normally patent. The degree of improvement will be according to the completeness with which we have removed prime and contributing factors; this is no mean task, but, as a rule, possible, if we grasp the situation and apply ourselves. Hence I can not feel that we are justified in discouraging that multitude of cases under 60 years of age who still retain the ability to understand clearly spoken words, and who are quite ready to have treatment when medical minds will agree on its utility.

Nonsuppurative inflammations of the middle ear, regardless of form, depend upon similar conditions for their origin; the principles of treatment involved in their relief are the same. However, necessity does not demand a dissertation on varied abnormal conditions within the tympanic cavity, neither will I assume to cover in this paper all the factors that may act as causative elements, but rather will devote myself to those most likely to impede recovery of the hearing power.

In looking over recent progress it must be admitted that what ability we now possess to successfully cope with catarrhal deafness is in a great measure due to the advance in rhinology, for this work as a preliminary step to future efforts appears peremptorily demanded. The improved state that has followed correction of nasal abnormalities could not help but give happy results in the more simple cases, but it is likely that others have been balked as I have been by a goodly number who have failed to improve from those surgical methods as we hoped, and it is through a study of the causes of these failures that I chose the subject of this paper.

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*Presented to the Section on Laryngology and Otology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

The nasal, postnasal and tubal membranes are capable of, and susceptible to, engorgements from various causes; hence if we are dealing with a disease so obstinate as chronic catarrhal deafness, each possible source of a recurrence of those engorgements must be eliminated, or they will prevent a good result following the best nasal surgery, and the most careful after-course of ear treatments.

Among these systemic factors upon which it seems particular stress should be laid, are: 1, a sluggish skin reaction; 2, low vital forces; 3, torpid liver; and 4, a lack of proper exercise.

I have mentioned sluggish skin reaction first because nothing is more common in creating pernicious head colds to which, as a rule, our cases are subject; and when we attempt to correct this tendency to head colds, at least two interesting problems are before us: The solution of the first calls for a more prompt skin reaction, and I know of nothing better for this than cold baths and friction. The plunge, shower, douche, or even putting on water from the ordinary bowl by the hands, acts with much facility and benefit. In patients of low vitality this application of cold water may not be followed by the warm glow that indicates a good reaction unless preceded by some light exercise, or brisk rubbing, but in any and all events some course must be persisted in to get and keep the surface circulation up to a normal standard, the acquirement of which, though slow but sure, is best shown by its degree of reaction to cold.

In my own practice I find that patients, as a rule, take warm baths, and these only for cleanliness' sake; in fact we seem to be living in an era of carelessness as regards personal hygiene. The busy American jumps out of bed in the morning, washes his face and hands, hustles into his clothes, rushes down to breakfast and away to business, works until Saturday night, takes his weekly clean up, and so on year in, year out, giving himself less care than he does his horse.

Another problem in the avoidance of frequent colds is protection from exposure; which as experience ripens appears of less and less importance. While in a weakened individual, this is for a time unequivocally necessary and is always a point to be observed, still I believe with A. Chelmoski[3] that "the proper method of protecting against cold is not to wear an excessive amount of clothing, but to stimulate the skin to rapid reaction." This is a rational idea and appeals to us when we consider the importance of its glandular and circulatory functions. The only thing necessary is that we give this matter the thought and attention that we do other vital subjects. The skin reaction should be so prompt that it will be a shield rather than a menace to health.

The next systemic factor that our failures have shown to be a great hindrance, if we let it pass unnoticed, is a lowered vitality. Without a good general tone, the system is slow to throw off any disease, and particularly one so deep-seated as chronic catarrhal deafness.

A torpid liver or a lack of exercise, with attending digestive disorders, may also create and make obstinate an inflammation in the Eustachian tube, effectually blocking anything like a regular course of vapors to the middle ear; even gastric, uterine and renal troubles have their bad influence on the thickness of the membranes, but with many other constitutional causes, these latter require attention better, and beyond that which the aurist is expected or justified in giving. In other words, catarrhal deafness is often dependent upon so many possible causes or combinations of causes, that it calls into play not only the qualification of a nose, throat and ear specialist, but makes it necessary that he should have had the training of a general practitioner.

In cases of chronic type, correction of nasal and postnasal morbid states is but a small preliminary step. If patients be of low vitality, anemic and very sensitive, they must be built up. If they be full-blooded, their diet must be restricted, their exercise increased, and their hepatic function kept regulated until such sources of recurring attacks of tubal inflammation are obliterated. Of what use is it to treat inflammations that recur without we first remove their sources? We may benefit them for a few hours, but we lose the confidence of our patient, because we fail to get results on chronic states; he stops treatment and our efforts are discredited.

A limited number of persons become afflicted with deafness in early life, because of disease or environment, who at the time of our examinations are in good general health, with nothing in the way to prevent ear treatment except perhaps a tubal inflammation induced by some intranasal pressure. These patients are just so much nearer the period in which vapors can be satisfactorily applied to the middle ear.

A knowledge of hygienic care and how to increase bodily resistance to disease is a distinct obligation upon the otological specialist, but I hope I will not be construed as meaning that we should take it upon ourselves to correct complicated systemic disorders; though we should be able to relieve a congested liver, direct in matters of personal hygiene and insist upon their observance. The physician's duty is to correct causes and apply treatment—the patient's, to follow directions.

As mentioned earlier in this paper, catarrhal deafness is worthy our best efforts. As a disease *per se*, within reasonable limits it is comparatively a simple proposition if we eliminate all causes of recurring inflammations of the Eustachian tube. To be more explicit, I feel that its greatest problem is the removal of these causes; after-treatment consists simply in maintaining the improved condition and applying, daily if indicated, mild intratympanic ventilation, stimulation and massage. Persistent effort can be looked upon with favor; even the quite advanced sclerotic forms are not so formidable if pernicious influences are out of the way. Nature then takes hold with a ready hand and gives us, if not a cure, marked improvement.

Personal experience has taught that failure to improve the hearing power means either a fault in the patient or in the physician, not in the local ear condition. There must still remain some uncorrected extraneous cause that is keeping the Eustachian tube swollen. It is not the duration of the disease nor the degree of deafness that should govern our prognosis, but rather a good physical condition and the financial ability to have skilled attention.

The surgical aspect of cases as a preliminary step is important, but no more so than a functional equilibrium, for there is usually a stage following operative work in which but little if any effective treatment can be carried through to the middle ear, because of some attending systemic disorder, and those systemic disorders are determining factors in the majority of chronic cases.

BIBLIOGRAPHY.

1. Roosa on Diseases of the Ear, 7th Edition, p. 401; Dench on Diseases of the Ear, p. 310; Barr on Diseases of the Ear, 73; Snow on Modern Possibilities in Chronic Catarrhal Deafness, in the Laryngoscope, December, 1898.
2. Twentieth Century Prognosis, by the Author, London Journal of Laryngology, November, 1899.
3. American Year-Book for 1899, by Gould, p. 1, or the Deutsch Arch. f. Klin. Med., October, 1897.

DISCUSSION ON PAPERS OF DRS. STILLMAN AND SNOW.

Dr. C. M. Cobb, Lynn, Mass.—I would like to know whether Dr. Snow includes in his statement that these cases should be benefited in the presence of an adhesive catarrh?

Dr. Halsted, Brooklyn, N. Y.—I thoroughly agree with the Doctor in drawing attention to the systemic factors. Most of us spend too little time in the consideration of these facts. By paying attention to the systemic factors, we are often able to obtain results that otherwise would be impossible. But I disagree with the Doctor as to the frequent use of vapors and drug treatment of the middle ear, as he advocates. It has been my misfortune to see many cases become worse after a temporary improvement, simply because of too much local treatment. There comes a point when we can advance no further by local treatment in these cases. Because the patient is able to respond progressively better to a certain few frequently repeated tests is not necessarily evidence that the case is improving. A set of tests may give us a false impression of the progress of the case. If we use the various vowels, for instance, we find a certain improvement, but beyond this we can not go by the treatment with catheterization and the use of vapors. Often the catheterization and the vapors do harm. The catheterization may set up and keep up an inflammation in the Eustachian-tube, if used every day as the Doctor recommends, that simply makes the condition worse. I am not an advocate of the use of Politzer's douche alone.

Dr. J. O. Roe, Rochester, N. Y.—I am in thorough accord with the sentiments expressed by Dr. Snow. A great many cases of local engorgements about the upper air-passages are due to general systemic disturbances. In fact, the great majority of colds, to which people are so frequently subject, are due more to internal derangement than to external atmospheric influences. In the great majority of cases in persons who have taken a severe cold, in the head, for instance, by examining into the condition of the system we will find that it is induced or very much aggravated by a general sluggish or depressed condition of the system. During the past winter I myself had two severe colds in the head, starting in the nose. In both cases I could trace it directly to general disturbance, overwork and lack of exercise, and the condition we commonly term biliousness, which is often the foundation of colds. The colds in the head—which so often cause ear complication—are therefore due to two conditions; first, to ptomain poisoning, the poisoning of the blood from improper elimination of the skin, bowels, liver, etc., and second, to reflex disturbance, from the abdominal organs to the nose.

In regard to the treatment of the chronic ear affections, it is necessary, in the first place, to put the nasal passages in order. If we have an obstructed nose, a badly diseased condition of the nasal cavity, it is much more important to put the nose in order than to begin treatment of the ear, because if you could do but one you would benefit the patient more by putting the nose in order than by treating the ear for an indefinite length of time. After first paying attention to the nose, then, by proper treatment of the ear, we will often obtain most excellent results, in cases of chronic catarrhal deafness, that are considered incurable. There is a point in regard to the Eustachian catheter, to which reference has been made: The use of the catheter is exceedingly important for two reasons: 1, in medicating the ear through the catheter, and 2, in the mechanical effect of the catheter in overcoming a stenosis of the Eustachian-tube, which has resulted from interstitial thickening of the tissues around the tube, particularly at its lower end.

Question—I would like to ask Dr. Roe how he overcomes obstruction high in the tube?

Dr. Roe—In the majority of cases you can pass the catheter up through the membranous portion of the tube for quite a distance, and by having a proper catheter you can accomplish much in many cases. In some of these cases the use of galvanism produces most excellent results.

Dr. G. L. Richards, Fall River, Mass.—I can appreciate what has been said about elimination, as I have long been contending that the bowels should move at least three times a day, inasmuch as we eat three times a day. It has been observed, among animals, that they ordinarily empty the bowels much more often than we do. The removal of waste products of digestion has been so much influenced by the matter of convenience, that we have lost sight of the normal physiology of defecation in its relation to the ingestion of food. The question of ptomains as produced in our own bodies, from faulty elimination of waste products of digestion, has not received sufficient attention at our hands.

Dr. E. Pynchon, Chicago—Both papers are very commendable, inasmuch as they are conservative and call attention to systemic treatment, which is too often neglected. As regards the systemic factor in catarrhal deafness, one of the features to bear in mind is the disadvantage all of us derive from our modern system of living in overheated buildings that are too often poorly ventilated. We go in and out of these houses, stores, hotels, etc., several times a day, without any hesitation at the doorway, and without removing our overwraps. My own custom, during real cold weather, is, if possible, always to remove my overcoat when going in a warm place, and to stop for a time in the passage-way when coming out. Instead of wearing a heavy undershirt during very cold weather, I advise putting on two light-weight undervests, which give the warmth that is desired and do not overheat the body. Attention should be paid to the matter of food and exercise. There is no doubt that we eat too much, and that insufficient attention is paid to diet and excretion. One thing I would urge is the value of regular and frequent drinking of water. The same conditions which the Doctor has referred to as tending to produce catarrhal deafness also assist in the production of the so-called rheumatic diathesis. As regards treatment, while the Doctor has touched very little upon it, I can not refrain from calling attention to a new method of treatment recently introduced by Dr. Weaver, of Chicago, to which he has given the name "intratympanic massage." In the treatment recommended by Politzer there is massage at each inflation, but the inflations are not often enough repeated. The device recommended by Dr. Weaver consists of a small wind-mill, if you please, which is caused to revolve by a shunt of the air current while the bulk of the air passes through a hole in the shaft of the wind-mill, and is thus rapidly interrupted. I have been using this device with a Buttles' inhaler, while inflating by Politzer's method. Of course it will be understood that compressed air of proper pressure must be employed.

Dr. C. M. Cobb, Lynn, Mass.—We are a little inclined to the use of loose terms. Oliver Wendell Holmes said in one of his papers that our forefathers were very wealthy in expressions. He declared that he knew of nothing that sounds so well and means so little and is so satisfying to the patient "as congestion of the portal circulation." We have passed beyond that stage, and now we have lithemia and uric acid, which are terms referring to probably the same condition. The subject of an acute cold is interesting. The systemic condition has probably something to do with it, and the cold probably has something to do also with the systemic condition. When a man contracts a cold, whether he has lithemia or a local abstraction of heat from some part of his body, in a very large percentage of cases the cold will be found to commence in one of the chambers of the nose and pass then to another. Can anyone tell how any systemic condition or abstraction of heat from the body may cause the symptoms we call a cold? A man gets a cold in his head, and not much anywhere else in comparison with the amount in his head. These cases of catarrhal deafness are all prone to have colds, and this is largely due to nasal empyema. These patients are prone to have colds from over-indulgence and exposure, and the colds they get do not run the course of an ordinary coryza. Those cases deserve a great deal more attention; they should be sorted out and sifted out from other cases. When you eliminate all the cases that can be classed as influenza, or that depend upon an exanthem or pneumonia, the remainder of cases of acute rhinitis are probably of infectious origin. All those things have a direct influence on the ear. If that part of the naso-pharynx to which the Eustachian-tube leads is involved, and the lumen of the tube is partially or entirely closed the ears suffer, or the secretion from the nose or naso-pharynx may be carried to the middle ear by forcible blowing, or the ears may be infected by the extension of the inflammation by continuity of tissue. These patients would probably get well if it were not for more or less constant reinfection.

Dr. F. J. Quinlan, New York City—The question of prophylaxis of disease is one we should always consider. Many colds depend upon bodily fatigue and faulty assimilation. A man is exposed to some influence of cold and receives the germs of disease. The phagocytic action of the leucocytes is insufficient and the germs enter into the system rapidly. There is lymphatic stasis and there is no better or more accessible vestibule for the invasion of germs than the nose, which is constantly connected with the outside atmosphere. Therefore, if a man's system is lowered, the turbinates at once become congested and unable to empty themselves. The question of prophylaxis is largely in the individual. A celebrated pediatrician a few years ago tried to eliminate postnasal growths by dropping salt water through the nares, and someone told him that he would do much more good if he gave the child full length baths of salt water. Often the system is loaded down with non-assimilated products. The subjects of the papers are not properly emphasized. Water applied to the skin causes the greatest tonic effect in its vivifying influence. The rich can use it, but the poor are deprived of its use and hence we see the greatest number of these cases among the poor. We should let the people know of the good effects of water used both inside and out. The Doctor has spoken of clothing, but I think the question of beef is most important. These colds and conditions of congestion weaken the individual and start a train of ills that involves the nose and throat and every part of the mucous membrane.

Dr. S. F. Snow, Syracuse, N. Y.—I will answer Dr. Cobb's question as to whether I include the cases with fixation of the stapes. I do not. But how many do we have come to us that are or really get in that condition later on? Cases of fixation of the stapes do occur, but I doubt whether they occur often enough to warrant us in giving an unfavorable prognosis by the wholesale. One of the gentlemen has disagreed with me as to the advisability of such frequent local treatments. I wish to place myself before this Section, and the world if necessary, as willing to stand by the position I have taken. There are cases in which daily application might be harmful, for they are not yet in that improved physical state where local ear treatments can be effectively employed. But if we get other things out of the way, and secure a functional equilibrium so that the skin reaction is good, the liver normal, and if they are careful of their habits, we will find a time when they will tolerate the vapors and improve very markedly under their use. The more chronic the case the more often we have to treat them. I do not advocate treating these cases daily year after year, but very often I do for three consecutive months, the treatment to be repeated when unfavorable symptoms appear. As regards tests, my patients are rarely tested, except at the end of a course of treatments. I assure them first that we must clear out the nasal passage, and I accomplish that whether it takes one month or two or three. I do not encourage them to have the vapor used until they have had bad constitutional states corrected. I will not let them have treatment until they are ready for it. When the constitution is fit and they are willing to follow my directions, I am ready to treat them, and successfully. I am glad the paper has been so thoroughly discussed, and I can not convey the depth of my feeling regarding the importance of these cases. We must, as aurists, do something for them.

DIAGNOSIS AND PROGNOSIS OF EAR DISEASE.*

B. ALEX. RANDALL, M.A., M.D.,
PHILADELPHIA.

It is probable that most medical men, if asked as to the instrumental aids to the diagnosis of ear diseases, would think first and perhaps only of a speculum. Too many would try to excuse their failure to study a case by their lack of such an instrument; and yet many would undertake its treatment upon some fancied basis without knowing anything as to what was really before them or having the means and skill to treat it if they knew. The foundation of such foolhardiness is a total ignorance of the methods of aural diagnosis and skepticism as to the ability of any one to do more than guess in the matter. Yet it is axiomatic that diagnosis is essential to prognosis and both of these are requisites for any rational treatment. Even among men practiced in otological matters there is a woful failure to understand and employ diagnostic measures, with many consequent mistakes and much futile if not harmful work. Hence the need of discussing so trite and elementary a phase of our specialty as that which I have chosen.

To the patient, if not to the surgeon, prognosis is of vital importance. Upon the etiology and pathology of the various affections must depend the questions as to the urgency and the promise of treatment; and of these we can speak only from the standpoint of correct recognition of the nature, phase and complications presented in the case before us. So the life-history of disease, general and special, must be known to the specialist, as well as the details of the clinical picture met, and he must figuratively see through the ear if he is to make a good application of his special knowledge and skill.

Almost every diagnosis is based, here as elsewhere, upon the anatomy and physiology of the parts. Leaving aside the former subject, I will ask you to consider here only some of the physiological aspects which we ought to study as to the normal and diseased ear. We may premise that for the external ear sight and touch are principally available; for the middle ear with its air cavities, pneumatic measures; and for the internal ear, acoustic means.

It seems superfluous to insist upon the importance of unaided as well as aided sight and touch in our study, yet the numberless instances where their use has been neglected and gross blunders of diagnosis made because the practitioner refused to use his senses and yet undertook treatment on the strength of his imagination, compels reiteration of this trite matter. Many cases can be studied by the natural light falling past the examiner's head into the straightened ear-canal, to the recognition of furuncles, foreign bodies or the presence of a normal drumhead. Remember that Wilde did *most* of his work with nothing but a speculum, and often did not need that; yet many a modern aurist with a full armamentarium could learn much from Wilde's writings. Specula can be improvised of letter-paper or other material; any piece of mirror can be brought into use, especially with sunlight or other strong illumination, and a hair-pin or other bit of wire can be made into an admirable probe; but it is the eye and hand behind these or other instrumental aids which are the real means of diagnosis, and "special" training is by no means essential if a true physician, with gentle hand

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and observing eye, undertakes these studies. Even in palpation there are many ways of failing to learn. A swollen mastoid may seem tender and fluctuating to a careless hand, and a trephining be advised when carefully placed index fingers would prove the swelling a mere edema and the pain not due to deep bone-lesion, but to the motion imparted to an inflamed canal. One may recognize blindfolded the indurated rigidity of an eczematous canal in which a keen eye may discern no surface signs of the affection, and by proper prognosis avoid imminent distress for the patient and humiliation of himself. Touch must aid sight in many tympanic conditions before we can know what are the real features of the picture presented, by sweeping away the seeming landmarks and proving them to be but pus, epithelium or other foreign matters lying in front of the real structures.

Yet even when the diagnosis thus made is clear and positive it may be only superficial and partial. The manifest lesion may conceal something beneath which is far more important. A trivial furuncle of the canal may mask a serious tympanic inflammation and we must often remain in doubt as to the conditions beyond. Here the pneumatic methods of tympanic study may aid us greatly, but still oftener the acoustic measures which investigate the percipient apparatus and its adnexa.

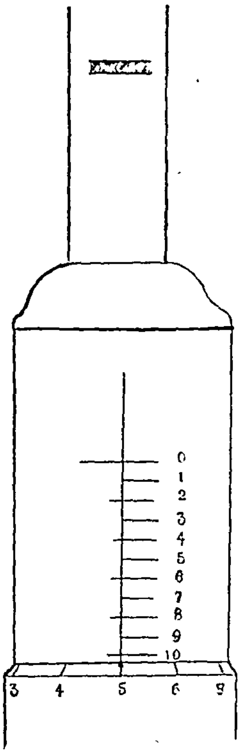
Of inflation measures and pneumatic massage much might here be said, for more can be done with these and more mistakes avoided than is at all sufficiently realized. I feel need of calling attention to Löwenberg's simple test of inflating chloroform vapor, which by feeling cold to a sclerotic ear, instead of hot as to all others, may give us early a very important prognostic sign. Yet the acoustic tests are still less fairly understood and practiced, and it is upon these I would prefer to lay my main stress.

Almost every expert is on record as to the small value of the watch as a test, and Politzer's acoumeter, although well conceived, has not much better met the requirements. Still less have some of the haphazard substitutes which have been put forward for railway and school tests any claim to be accepted as having standard or comparable value.

The voice-tests in faint and loud whisper, spoken with the "reserve air" which can be forced out after ordinary tidal respiration and calling for repetition by the patient of the well-chosen test-words, are far more precise as well as practical. But all these are quantitative rather than qualitative measurements of loss, not helps to recovery. We must have a "tone series," in form permitting comparison of conduction by bone and by air, before we can learn some of the most elementary and fundamental data.

It may be too much to expect that the general practitioner should in preparation for his few ear-cases equip himself with a series of tuning-forks, and even the specialist must draw the line at some of the numberless implements urged by enthusiast or instrument-maker upon his attention, yet lack of a well-selected complement must seriously impede if it does not vitiate his diagnostic work.

When we hear a man say that he puts little confidence in the results of the tuning-fork, we may be fairly sure that he has but a single fork and makes poor use of that. One fork is competent to give us but a part of the information needed in many cases, although it can be very valuable within its field, and I would place a fork of some 200 double vibrations per second as the first choice in the series (A-213). It should be of a good size, so as to have 80 to 100 seconds' duration of sounding after a moderate blow, such as that of falling its own height upon the knee or a rubber block, but some of those offered are far too heavy and, with their clamps, needlessly expensive. Some means of suppressing the over-tones is requisite, but a bit of rubber-tubing drawn over the ends is at times better than the clamps. A fork of some 500 vibrations (c-512) is more generally recommended and can be purchased for 25 cents, in small size, at most music stores. Another of two or three octaves higher pitch, 2-4000, has occasional usefulness, but one two octaves lower than our first choice is much more valuable (A-53). The octave below this is of doubtful audibility, while this tone ought to be heard by any normal ear, and it is so early lost in cases of obstructive lesion that it forms almost a premonitory indication of commencing catarrhal deafness. The higher tones already mentioned better serve to test the percipient apparatus, but are surpassed in this by the Galton whistle or the König rods with their far higher range. A cheap and handy substitute, of real though of limited value, is furnished by the little bent-wire "serpentine screwdriver" sold in most of the bicycle stores, all of those tested having had tone of fair purity of about 35,000 double vibrations per second.



THE GALTON WHISTLE.

APPROXIMATE PITCH IN DOUBLE VIBRATIONS PER SECOND.

5=52,000
10=40,000
12=35,000
18=30,000
21=25,000
24=20,000
28=15,000
35=12,000
48=10,000
60= 7,000
70= 6,000
84= 5,000
105= 4,000

The Galton whistle, however, is of wider value as originally made, and may be more precise yet in König's and Edelmann's improved forms. I must warn, however, against most of those offered for sale, since they are generally travesties upon Galton's instrument, and of no more value than a boy's willow whistle. Even some coming from Meyer & Meltzer, in London, have not conformed to the original apparatus, and I know of but one maker in Philadelphia and perhaps one in Boston from whom standard whistles have been obtained. The square-cut opening, the proper caliber of the tube, correct pitch of the screw, and accurate zero-point are one or all absent in many of the alleged Galton whistles offered; yet all of these characteristics must be demanded if any standard is to be maintained. Some of the published results from tests are to me inexplicable, if genuine Galton whistles were employed, so utterly discrepant are they with my findings. A tube length of 10 mm. ought to give a note of about 21,000 double vibrations per second, and one of 1 mm., corresponding to one full turn of my instrument, a tone of 42,000. A higher note than this is audible to most of my patients as well as to myself, and I would set the normal limit for young ears above 50,000, as I have no difficulty in hearing Appun's 49,000 fork or the Galton whistle at less than one turn.

Qualitatively, then, we ought to determine for all our cases whether they hear tones as low as 50 and as high as 40,000, and between these moderate limits make fuller test with two or more forks, while in those giving evidence of nerve lesion a wide range should be tested by the whole scale of the Galton (4000 to 40,000) and a number of lower tones.

In addition to these studies of the hearing by air-conduction, we need direct and comparative tests of the bone-conduction, remembering that there is a senile loss of the conducting power of the cranial bones aside wholly from faulty perceptions, and that the palpable vibrations which are as notable on the patella as on the mastoid, must not be confounded with the audible. Weber's test of the lateralization of the vibration to one ear from the middle line of the head had better be preceded by Rinne's test, since it is hard for many patients to believe their own senses when the tone seems louder in the worse ear, which they have perhaps long regarded as totally deaf. While the Schwabach method of timing the duration of the tone by air and by bone is eminently valuable, the simplification made by Roosa and Emerson is even more practical, consuming less time and securing better responses from most patients. If the fork, not too strongly vibrating, is held close before the ear and then its handle rested upon the mastoid, with the question, "Is it better front or back—back or front?" suiting the action to the word, few have difficulty in answering correctly; and as the loudness and the duration are comparable, we learn whether the normal preponderance of air-conduction exists or not, and can easily move the fork to our own ears for quantitative comparison. As the ordinary A fork (213) should be heard on moderate stroke only about 45 seconds by bone, as against 100 by air, the preponderance, as often found in tympanic cases, marks a decided impediment to the due penetration of the aural sound-waves through the affected conducting apparatus. It is easily demonstrated that this same obstacle shuts in, so that the fork vibrating upon the head is heard louder and longer than normal—perhaps for 50 or 55 seconds. This is best shown by the simple test of Gardiner Brown, which consists in holding the handle of the slightly vibrating fork upon the bridge of the nose and noting how much greater or less time the patient can hear it than the examiner's fingers can feel the vibrations. Cessation should seem simultaneous to each, and in spite of personal equations one second of discrepancy can generally be noted by this means, and secondary involvement of the percipient apparatus thus detected. The Weber test then used, by resting the vibrating tuning-fork, not on one, but a series of points in the middle line of the head, will generally obtain a correct answer and be lateralized to the worse ear in obstructive, to the better ear in perceptive, lesions. Results which are doubtful with a fork of 200 or of 500 vibrations per second, will often be unmistakable if those of higher or lower tones are employed, and due care be exercised to set aside any preconceptions of the patient and to elicit answers not as to what they *think* but as to what they *hear*.

Far too little employed is the valuable test of Politzer as to the permeability of the Eustachian tubes in the act of swallowing, for the tuning-fork vibrating before the nostrils should be heard much louder at the moment that the tube opens in deglutition. This tells of its physiological action as contrasted with its more passive distensibility on inflation, gives clear contrast as to the two ears and often tells more as to the stage and prognosis than any other test at our command. Bing's test also proves at times valuable, in that the tuning-fork vibrating on the mastoid can be made again audible after it had ceased to be heard, by stopping the canal with a finger; and as this secondary perception should have a measurable length in cases of nerve-lesion we may recognize the coexistence of slight conduction impediment by its subnormal duration.

While the complaint of the patient and some of the details of his history should always form a part of our record, more valuable facts of the history will often be gained by our objective study and due correction made in his statements.

The objective findings should then be noted as to hearing for conversational or whispered speech; for the 50, the 200, the 500 and the 2000 v. s. tuning-forks and the Galton whistle by air, and for the 200 fork by bone-conduction from the mastoid and from the nose; for the Politzer's test of Eustachian patulency and for the lateralization from the middle line. Add the findings of the otoscopic examination, of anterior and posterior rhinoscopy and the response to inflation and pneumatic massage. These, added to the name, age and occupation, form a record concise, quickly obtained and pregnant with meaning for correct diagnosis and prognosis.

DISCUSSION.

Dr. J. Holinger, Chicago—The Doctor showed us his series of tuning screw-drivers. They are undoubtedly irregular in their intervals and the time they keep on ringing is too short. To overcome these two cardinal points was the effort of Bezold and Edelmann for over ten years. Why did he not use those beautiful sets of tuning-forks of Bezold-Edelmann? They contain from sixteen vibrations up to the highest, without interruption. The number of vibrations is given on each tuning-fork. They are mathematically correct. It would be impossible to compare the Doctor's records of cases with the sounding screw-drivers with the records obtained by anyone else. Then as to the square opening in the Galton whistle, it has long been proven irrational and the oval opening has been found much more sharp in its results. Edelmann had to provide for an opening that could be made smaller or larger. If the opening is unchangeable the oval opening is preferable, and its results are *not* worse, as I can prove with Koenig-Schwendt's dust-figures.

Dr. Edwin Pynchon, Chicago—The paper has been very instructive. Two months ago I heard a similar one read before the Western Otolaryngologic Society, at St. Louis, and I then called attention to a little procedure which has been of assistance to me when the patient is in doubt about the Weber test. Supposing the left ear is affected and the patient claims to hear the test best with the right ear. I then stop up first the right ear and then the left, repeating the test. Afterwards, without stopping either ear, I again place the tuning-fork upon the top of the head, when the patient correctly tells in which ear the test is best heard.

Dr. E. Amberg, Detroit, Mich.—We know that Politzer's instruments are in general use, but I have heard on good authority that they *do not compare* accurately one with another. I thought I could overcome this difficulty by having an apparatus constructed on a different principle. There came to my mind the apparatus which is used for the measurement of the depth of sleep in the psychophysical laboratory. I had such an apparatus constructed in Berlin, and I think that these instruments may compare more favorably one with another. However, I do not know whether those fine points are of such great value in our daily work. At any rate, we should make it a matter of principle to try to be as exact and correct as we can. Therefore, I would take exception, at least for the use of the specialist, to this little instrument which is intended to replace a tuning-fork, shown to-day. Professor Loeb, in a conversation, if my memory serves me right, told me that experiments had been carried out under his direction. years ago, with the aid of an instrument similar to the one I have mentioned. If I am not mistaken, the experiments to which Professor Loeb referred were intended to establish facts as to the acuteness of hearing under various conditions. It is important, I think, to consider conditions under which hearing tests are made. I remember that one time when I had overworked myself I thought I heard the clock at 11 p.m. strike twenty-seven times. It was, if I remember correctly, after I was fatigued through study. The time of the day and the other conditions of the patient, I think, should be taken into consideration when a hearing test is made.

Dr. B. A. Randall, Philadelphia—I have the Edelmann tuning-forks and they are very nice, very useful and pretty, and as specious as any that are made, for, like the Politzer acoumeter, they are apt to differ in tone and loudness and other essentials, so that in a dozen you could hardly find two that do not differ. I have not tried to split hairs, but only to get at the diagnostic points that are of value in treatment. So I have not tried to lay down just what should be the precise limits as to time and distance that the fork should be heard. As to the Galton whistle, I have brought that forward because the prime essential lies in the fact that we are dealing with a closed pipe and must have a definite length and that length can not be defined if the opening is not rectilinear. Edelmann's new whistle may be as specious in many respects as the set of rods I have, which he said he had made for Koenig's rods; but they were inaccurate, arbitrarily numbered and what they stood for he could not tell. I have much respect for the good work done on the other side of the water, but the very bad work I have seen emanating from Edelmann and other men has made me favor the work done on this side of the Atlantic.

EFFECT OF ALCOHOL ON THE NERVOUS SYSTEM, THE MIND AND HEREDITY.*

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Alcohol has a twofold effect on the nervous system, a direct or primary, and an indirect or secondary. Either of these may act physiologically, i. e., functionally, or pathologically, i. e., structurally. Either may and does unfold its force upon every part of the nervous system, brain, cord, and peripheral nerves; in fact on every organ and tissue of the body, notably upon the blood-vessels, particularly of the brain, the kidneys and the liver. The subject is too large to render justice to it within the limits of a paper like this, and I shall, therefore, be forced to confine my remarks to a narrow domain.

Upon the nerve tissues alcohol has an acute influence. This can best be studied by experiments on animals, and by the effects shown in fatal poisoning with large amounts of alcohol in persons unused to its influence. Of the ordinary state of acute intoxication, I need not speak. That picture is familiar to all of us.

In a very able paper, Dehio,[1] some years ago, demonstrated changes in the ganglion cells of the cerebellum produced by acute alcohol poisoning. A year later, Stewart[2] confirmed and extended the observations of Dehio, which consisted in the diminution of the chromophile granules of the nerve cells of the cerebral cortex, the Purkinje cells of the cerebellum, and the large multipolar cells of the spinal gray matter. The importance of these changes is vastly increased in the light of the theory that the ganglionic cells possess certain powers of mobility of an ameboid nature, which permits them to extend and to retract their cell-prolongation to a slight degree, producing normally a contiguity of structure *without* continuity. I believe in this theory, for it is the only one which explains to me the phenomena of life, both in rest and in activity. Into that, however, I can not enter further at present.

I have in mind a unique, unpublished case which may bear a close relation to the observations of Dehio and Stewart. It is that of a young man who, about one year ago, was referred to me. The patient presented a most curious complex of symptoms, which I have nowhere found described, and which I herewith take the opportunity to record.

F. W., white, a farmer, aged 19 years, had up to about seven months previous to my seeing him been quite well, and constantly engaged at work on his father's farm. During a period of perhaps a year before any symptoms had become manifest he had been drinking somewhat, but had never indulged to intoxication. Gradually a general lack of nutrition set in, he began to lose weight and strength, and almost imperceptibly, at first, peculiar spasmodic seizures supervened. These attacks were wholly motor in character, occurring, as the malady developed, more and more frequently until, when he came to my sanatorium, they were almost constant, recurring at the actual rate of about once every two minutes, day and night. During the entire period of the affection the appetite was excellent, no symptoms were shown by any of the internal organs, no sensory changes were manifest, nor were the secretions altered, save that the urine was somewhat scant and perspiration slight. In fact, all symptoms related to the motor nerve sphere, though at no time was there the slightest degree of paralysis noted. The seizures were characterized as follows:

Every few moments the muscles became tense and rigid, apparently all over the body—trunk and limbs—face neck, eyes, tongue, larynx, esophagus, etc. During the attack, he could usually make voluntary movements, but he could walk, talk, breathe and swallow with difficulty. The facial muscles and masticatory muscles became "set" and the neck stiff. There never was any inclination to opisthotonus, nor the slightest loss of consciousness. No vasomotor signs were present, the cutaneous and pupillary reflexes were normal, but the deep tendon reflexes were somewhat increased. He suffered no pain whatever, but some muscular soreness existed, doubtless due to the muscular contractions.

At the first examination, I declined to give a positive opinion of his case, but expressed the conviction that the malady would not remain stationary, that it would either prove rapidly fatal, or he would recover under proper treatment within a few weeks, advising careful observation and treatment at the sanatorium. At that time I felt sure I could bar out an hysterical affection of which no symptom was shown. My advice was followed, and the patient remained under my immediate care for nine weeks. During this period he steadily improved under static electricity, massage and the use of tincture of gelsemium, ten drops thrice daily, until complete recovery occurred. The seizures gradually decreased in frequency and intensity until they ceased altogether. I would perhaps not have mentioned this case in this connection except for two facts. 1. The only etiologic factor to be elicited was that he had used alcoholic drinks before the affection obtained. 2. On three separate occasions, when he had almost recovered, friends came to visit him and he indulged in a glass of wine with the result that, each time, the attacks recurred with their former force and frequency, proving to me conclusively that there existed the most direct relation between the seizures and the use of alcohol which produced this peculiar multiple paramyotonic condition. I have never heard of a similar case.

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* Presented to the Section on Nervous and Mental Diseases, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

[1] Heinrich Dehio: Experimentelle Untersuchungen über die Veränderungen der Ganglienzellen bei der acuten Alkoholvergiftung; Centralbl. f. Nervenheilkunde und Psychiatrie, 1895, N. F. 6-113.

[2] Colin C. Stewart: Influence of Acute Alcohol Poisoning on Nerve Cells: Jour. of Experimental Medicine, vol. i, 1896, p. 623.

Undoubtedly, many other examples of the toxic character of alcohol and its influence on the nervous system could be cited. I need merely make mention of the analogous states known as delirium tremens, due to the excessive use of spirits containing large amounts of fusel oil; of the ordinary phenomena of acute intoxications in which the loss of inhibitory power in all spheres is of such common occurrence that it is usual to accept the opinion of the stimulating effect of alcohol on mental activity. This opinion I regard as decidedly erroneous. There is a vast difference between increased functional brain power and diminished inhibitory power, but momentarily the apparent effect may be similar.

When we come to speak of the more chronic condition called "alcoholism" we meet with a very different entity. Here can best be seen the effect of the poison on the nervous system, owing to the fact that widespread changes have taken place in the central nervous organs.

Of these changes those of the vascular system of the brain are by far the most common. It would appear, therefore, that the effect on the nerve tissue itself is purely secondary, due, in other words, largely to malnutrition of the nerve elements. The alterations in the structure of the artery walls are widespread and frequently reach a high degree, even to obliteration of the lumen of the blood-vessel and consequent softening of the brain tissue. Even a slight degree of textural change in the arterial structure is apt to be followed by an array of symptoms, made up chiefly of those in the motor field, such as tremors, weakness, etc., and those appertaining to the highest functions of judgment, memory and other intellectual faculties.

Of the many pathologic conditions supervening on the use and abuse of alcohol through a long period of time, it is surely unnecessary to speak at length. I need merely mention the frequent inflammatory processes of the peripheral nerves termed "alcohol neuritis," and reiterate the importance of the structural alterations of the blood-vessel walls with increased arterial tension, loss of vascular elasticity, consequent infiltration with calcium salts producing arteriosclerosis and endarteritis, which makes the danger of apoplexy lie close at hand. It must be recollected that *no healthy blood-vessel ever bursts save* and *alone* as *the result* of *traumatism. Whenever* and *wherever an artery breaks,* except it be due to injury, *the vessel must be diseased.* Moreover, no single factor contributes so largely to disease of the blood-vessels as much as the chronic use of alcohol poison. I have already alluded to the psychic changes of such individuals, to the loss of judgment, memory, and the other intellectual faculties, inducing changes in the products of the brain—the mind and morals. It is this which brings this question into close relation to civic life, which makes it the greatest civic psychosis.

Before speaking of the influence of alcohol on the mind, let me preface by saying that there exists in almost every case of insanity a well-marked predisposition of the individual to the development of mental disease. It would follow, therefore, that few persons of actually sound condition, anatomically and physiologically, ever fall victims to these affections. Again, it naturally follows that the weaker the inducing cause, the more pronounced should be the tendency toward deterioration. Conversely, it may be said, the more marked the atavistic tendency is, the less will be required to assist in the transition from the realms of sanity to those of mental disease.

Of the minor, practically merely contributing factors may be mentioned overwork, overstudy, emotional effects of an occasional character, the strain of acute diseases, and religious influences. You will understand that I nowise underrate the dignity of these elements, whose import is disproportionately increased if they become coincident with the physiologic periods of life.

Among civilized peoples, it has for generations been rightly deemed necessary to segregate the mental sewage of humanity. It should, therefore, be recognized as equally incumbent to thoroughly inquire into the chiefest causes through whose malignant influence these channels are kept full to overflowing. By such investigation, and by the lesson it teaches, can we hope to stem the steadily—if slowly—increasing tide of human forces whose awful effect is best seen in our insane asylums and in their close relations, the penitentiaries.

I have long held to the view that every disease has a basis to start on, and that no so-called "drug habit" forms an exception to this rule. Chronic alcoholism and its sister maladies, like morphinism, develop on a pronouncedly neurotic basis, and it seems to me the lack of success in the treatment of these affections is largely due to the fact that this neurotic element has been neglected. Allow that foundation to remain and the malady recurs. Alcoholism and similar vices belong to the realm of borderland, that great expanse abutting on insanity, and it takes but some slight contributing cause to pass over into the latter.

It has already been intimated that every individual case shows more or less predisposition to deviation from normal mental and moral standards. While the fact is true, the import of this is almost lost in comparison with noxious social and civil influences which are unfolding widespread effects. I fully realize the importance of this assertion, when I say that society and its social laws, civil life and its license are almost wholly responsible for the overcrowded condition of the insane hospitals and prisons, homes of the mental and moral degenerates. A charge so serious should be well founded. I shall seek to justify it.

The evolution of the human race is but the evolution of the individuals composing it. To evolve a perfect race, perfect individuals must be evolved. No nation passes into decadence and degeneracy save through the decay and degeneration of its components. Such truths must be quite apparent. Let us ask ourselves, then, what elements are mainly at work in the production of individual mental and moral deterioration, for the time being leaving entirely unheeded the many minor incidental factors.

The main causes I have already stigmatized as social and civic evils. To these I count habits of all kinds, yet most of all the use of alcoholic drinks; to these I count lack of hygienic principles which permits the gross spreading of diseases; to these I count, most important of all, the total disregard shown throughout the world to the bringing into it of human beings unfit to live. Daily, thousands of poor bundles of humanity are born into life with infinitely less concern for their future welfare and perfection than is exercised in the breeding of our most common cattle.

Alcoholism is a disease, an enormously frequent one, whose ravages are tenfold worse than any other known to me, for unlike them its effects are not arrested by death. It is neither my purpose nor my desire to inveigh against the use of alcohol, but to bring to your notice the malignant effect of its abuse. You must recognize alcoholism in its chronic form as a disease. It is attended by a huge array of symptoms. Suffice it to say that chief among them is the material change in the structure of the blood-vessels, notably in the brain and kidneys, and that secondarily, and sometimes primarily, minute alterations in the intrinsic nature of the brain cells occur, which ultimately bring about total wreckage, physical, mental and moral. Unfortunately, there is nearly always a marked tendency of neurotic character present which permits the development of any vicious habit, and this tendency is decidedly transmissible and augments by transmission. The appalling truth of the latter statement is amply verified by experience with the innocent offspring of alcoholists. Go into our homes for feeble-minded, enter the reformatories for boys and girls. There, surely, personal histories repeat themselves. There, surely, the traits and tendencies of ancestry can best be studied and the secrets of hereditary burdening and bondage be learned.

The influence of heredity has never been questioned in the domain of psychology, normal and perverted. Yet it must be plain that to speak of heredity means simply to accentuate certain phases of transmission, good and bad. With a few specific exceptions, disease is never handed down to progeny from the ascendants. As we inherit peculiar quantitative traits, so we assume peculiar qualitative elements from those to whom we owe existence. As children inherit looks and features so, too, they show certain characteristics of disposition, which, when they become predominant, form a predisposition or tendency in the one or other direction. That this predisposition can be checked or fostered is a well-known fact to every student of evolution; it is even known to every breeder of livestock who studiously seeks to eliminate the bad and foster only the good qualities of sire and dam. Shall we, human beings, gifted beyond all other forms of animal life, be less faithful in the pursuit of developing ideal offspring? Yet, as a rule, that is exactly what is being done. Mental cripples crowd our asylums for the insane, moral ones constitute our criminal classes, and these crowd our prisons and reformatories. The two are closely related and both are manifestly the results of existing social and civil principles. I most earnestly believe that the factors I have spoken of are the main causes —aided, it is true, by many of the lesser degree—which make it necessary to maintain the many institutions for the care of the insane and the imprisonment of the criminal, all for the sake of protection to the welfare of the general public.

In conclusion, let me emphasize by repetition the import of the foregoing. As I frequently tell my students, "it is not the man who occasionally becomes intoxicated who gets into trouble, but the man who drinks much and never gets drunk, or he who is nearly always drunk, that becomes a candidate for disease." His are the blood-vessels that early grow less elastic and more brittle, his are the chances for apoplexy and consequent infirmity, his are the weakened will-power and moral force, his are the nerve tissues that show slight vitality. His, again, are the offspring of stunted intellectual mold, who lack the ennobling qualities of men and women, but show to a marked degree the signs of mental and moral and physical degeneracy, which make them easy victims of epilepsy, imbecility and idiocy on the one hand, and, on the other, gives them the inherited and acquired right to a berth in the insane hospitals, the jails and the penitentiaries.

If but the true import of the alcohol question were understood and a proper conception of the effect of alcohol on the physical and mental qualities were gained, I believe few generations would pass before we would find in place of our institutions for restraint and punishment, hospitals for the care and cure of a class of patients more ill often than those whom we generally regard as sick or diseased.

DISCUSSION.

Dr. A. J. Pressey, Cleveland, Ohio.—The Doctor has covered the ground very completely, and I would say "amen" to what he has said.

Dr. G. W. Drake, Hollins, Va.—I would like to ask the speaker to tell us the difference between the effects of pure alcohol diluted, and the various preparations of alcohol in the form of whisky, brandy, etc. I have never had any experience, but I always had a desire to know whether it is more injurious or dangerous to use pure alcohol diluted or whisky or brandy. I notice he spoke of fusel-oil. Alcohol has the advantage of not containing it. I am only entering a protest against the idea that the mind is capable of becoming insane, drunk, intoxicated or affected by any material disease. The brain may become diseased, but the mind is not subject to any effect from material objects.

Dr. Albert E. Sterne, Indianapolis, Ind.—I only wish to apologize to the Section for cutting up my paper the way I did. I have taken the standpoint that nobody ever forms a habit except from a neurotic predisposition. It always has a basis to develop on, like any other disease, and the use of morphin and alcohol must be looked upon in its chronic form as a disease. Whether mind or matter is diseased is immaterial, it does not make much difference, and so far as the mind being capable of disease, that is something which I do not feel able to speak upon. My conception of mind differs from that of my colleague.

As regards the use of small doses of alcohol and alcohol in any form, I may simply reply that a poison is a poison no matter how it is taken. Mercury is mercury, no matter in what form we give it. The more refined the spirits, the less side issue will prevail, but the intrinsic effects of alcohol are never altered. There is a vast difference in the use of alcohol, say in the form of whisky, and beer as used in Germany. In the use of beer there is a mechanical effect observed. The large quantity of fluid dilates the blood vessels, and this insult to them renders them less elastic and, in addition to that, there is a large nutritive element which, if it is taken up as nutrition, means more work for the heart, because the new tissue must be nourished. You are overburdening the organ and, therefore, the effect on the ventricle is weakening; this is seen in beer drinkers, where it is not seen in alcohol drinkers or morphin habitues.

The question is entirely too large for me to cover in such a manner as this. I took it for granted that the alterations were all well known to members of this section. I have spoken to several neurologists about the peculiar case reported, and they have not been able to throw any light on it, or add to my conception of it.

Accidental Vaccination.—Apropos of a case of accidental vaccination reported in The Journal of March 2 (p. 584), another reported in *The Lancet* of February 23 is of interest. It was that of a man of 45, who, on Sept. 14, 1900, received a slight scratch on the outer angle of the right eye. A week previously his child had been vaccinated, and, in caring for the child at night, during the mother's illness, the scratch became inoculated from the child's arm. The man's eye became very painful and irritable, with symptoms of septic poisoning.

A CASE OF COMBINED GASTRIC AND AURAL VERTIGO, WITH A DISCUSSION OF THE PATHOLOGY OF SUCH CASES.[*]

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The pathology of the symptom known as vertigo is obscure in a great many cases. It seems quite clear that in some, and that a rather large number, it is the direct or indirect result of general causes acting on the nervous or vascular mechanism. As a temporary phenomenon it is often present in states of general debility, from whatever causes arising, especially on assuming, or suddenly relaxing from, constrained positions, or making sudden movements of the head. To a variable extent it forms a feature of the various acute and chronic intoxications both heterogenetic and autogenetic. It is a very frequent symptom of organic brain disease. Mendel says that every focus of organic brain disease will necessarily influence the cerebral circulation, and may consequently be associated with vertigo. This is especially true where the lesion is situated in a posterior fossa.

The present tendency on the part of some writers, Gowers among them, is to assume, where it can not be demonstrated, the existence of labyrinthine disease in practically all cases of so-called definite vertigo. While the relation of the labyrinth to the sense of equilibration, as well as to the equilibration itself, is clearly proven, yet it seems to me that the clinical evidence in favor of morbid conditions elsewhere being the efficient cause of definite vertigo is entirely conclusive. For instance, Osler has recently reported a case of vertigo of eighteen months standing entirely cured by properly-adjusted glasses. That such cases are necessarily due to co-existing latent labyrinthine disease is an assumption which lacks adequate support; and rests mainly on the clinical fact that an ever-increasing number of cases of vertigo, formerly attributed to various causes, have been shown to be connected with labyrinthine disease, which is the admitted cause of a very large majority of all cases of paroxysmal vertigo; and in part to the assignment of a too exclusive rôle to the labyrinth in the function of equilibration. It seems more probable that the superior olivary body, with which both the third and eighth nerves are intimately associated, and which, it appears probable, plays an important part in equilibration, has much to do with both labyrinthine and ocular vertigo. Ewald's experiments in which dogs slowly recovered the power of equilibration, after the extirpation of the labyrinth on both sides, seems to indicate that the essential mechanism resides in a ganglionic center. But in any event, whether the hypothetical labyrinthine disease is always present or not, it is obviously true that without the ocular strain or other condition so often occupying the relation of an obvious immediate cause, the vertigo would not exist. With reference to vertigo from oculomotor disturbances, Mendel has called attention to what he believes to be an important anatomic fact in relation to vertigo of ocular origin. He finds that the nuclei which preside over the movements of the ocular muscles are supplied by fine terminal branches of the posterior cerebral arteries, which do not anastomose, and that the vascular supply of these nuclei is therefore easily interfered with. It would seem as though involvement of these vessels might possibly be one reason why vertigo is so constant and early a symptom of arteriosclerosis—especially in those cases of comparatively rapid type, and especially if, as Mendel believes, true vertigo is always associated with disturbances of the eye muscles.

The nature of gastric vertigo, to which attention was long ago called by Trousseau, has given rise to considerable controversy. No one denies the frequent clinical combination of gastric disease and vertigo, and in apparently close relationship. Gowers, however, while admitting that paroxysms of severe vertigo are caused by gastric disturbances, doubts its purely gastric origin.

It is probably true that in some cases of undoubted labyrinthine vertigo the paroxysms are precipitated by gastric disturbances, and that many of the cases formerly regarded as gastric are really aural. But I do not at all believe that the assumption of labyrinthine disease in every case of apparently gastric vertigo is sustained by the facts.

In the first place it appears to me that a sharper distinction should be drawn between the balancing power and the balancing sense, and that it is the former rather than the latter with which the labyrinth is essentially concerned, although both functionally and anatomically the two must be closely correlated. Whether the cortical center of this balancing sense is in the temporal lobe or elsewhere, it is perfectly natural that it should or might be disturbed by any perturbation of the cerebral circulation—an inference which is fully borne out by clinical and pathologic evidence. That such disturbances do arise from oculomotor mechanism appears perfectly plain, and that they may arise from disturbances of more distant organs through more circuitous nervous channels is not in itself improbable. With reference to the relation of the stomach to vertigo it has been suggested that the latter may be caused by a morbid stimulation of the terminal filaments of the vagus in the gastric mucosa, reflexly exciting the motor nerves of the labyrinth and thus affecting the pressure of the endolymph in the semicircular canals. It is worth while bearing in mind that there appears to be a close relationship between the vomiting center and the sensori-motor mechanism concerned in equilibration. In most forms of severe vertigo nausea and vomiting sooner or later supervene. Whether we are able, therefore, to demonstrate the modus operandi of gastric disturbance in the production of vertigo, their clinical relationship rests on evidence which is apparently conclusive.

In this connection I desire to present the following case: Mr. S., a farmer, aged 55, was referred to me by Dr. H. A. Deumling, Jan. 22, 1900, complaining of vertigo and stomach trouble, the latter of 1½ years duration. Prior to that time his health had always been good. Shortly after the beginning of the stomach trouble he began to have left-sided tinnitus aurium, which has been a constant feature ever since. A few months later there appeared paroxysms of severe nausea and vomiting, which would begin with intense vertigo and severe aggravation of the tinnitus mostly limited to the left side. These attacks would last several hours, and some of the more severe ones for nearly a day.

In the intervals between these attacks his condition was fairly satisfactory, there being only slight evidence of gastric disturbance with an intensification of the tinnitus occurring invariably within an hour after every full meal. If he ate an unusually large meal the exacerbation of the tinnitus would continue, and in a short time vertigo would supervene, and, finally, vomiting with complete relief of all symptoms, with the single exception of the slight persistent tinnitus. There had been no headache at any time.

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[*] Presented to the Section on Nervous and Mental Diseases, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

He had frequently found that a fairly full meal, which he would regard as about what he ought to eat, might not cause any immediate exacerbation of symptoms, but in the course of twenty-four hours the tinnitus would become exaggerated. This had proved to be the case so constantly that taken in connection with the frequently immediate exacerbation of symptoms he had restricted his diet to such an extent that great emaciation had occurred and was constantly progressing. In ten days preceding my first examination he had lost six pounds in weight.

The bowels were somewhat constipated. The dejections contained no pigment whatever visible to the naked eye and were of the type usually, but absurdly, designated acholic. At the time of the paroxysms of vertigo he had to keep absolutely still, in a recumbent position. If he raised or turned his head quickly, or even looked up suddenly, it would produce severe vertigo followed by vomiting. The hearing was greatly impaired, especially in the left ear. The hearing distance of my watch, which should be heard at sixty inches, was twenty inches in the right ear and four in the left. During a few months the tinnitus became less in the left ear, and at this time he could hear much better. Otoscopic examination showed marked thickening and fibroid change in the left tympanic membrane. Tests with the tuning-fork showed that he could hear all the tones from C to C4 with both aerial and bone conduction. The vibrating tuning-fork was correctly located at the vertex or on either side.

Vision was 20/20 in both eyes, without any correction. Ophthalmoscopic examination was negative, excepting that the right field seemed rather congested; but both discs were clear and well defined. The pupillary reactions were normal and symmetrical.

The knee-jerk was very active on both sides; perhaps slightly exaggerated, and there were no Rhomberg symptoms, and no paresthesia or other sensory disturbances. The sexual, bladder and rectal functions were normal.

Urinalysis: Total quantity in twenty-four hours, 400 c.c.; sp. g., 1020; total solids, 18.64; reaction, acid, the acidity 60 degrees; color and odor normal; somewhat cloudy, considerable quantities of light reddish-yellow sediment; no albumin nor sugar; urea, 12 grams; uric acid, .6 grams; ratio of uric acid to urea, 1 to 18; total chlorids, 1.68 grams; total phosphoric acid, .92 grams. bile pigment present and from .02 to .04 per cent. of indoxyl potassium sulphate; no phenol nor acetone reaction.

The fecal matter, although, as already noted, presenting no color indicating urobilin or other pigments, was found by spectroscopic examination to contain unaltered bile in small quantities.

Blood examination: The centrifuge showed 39 per cent. of red cells, indicating a little less than 4,000,000 to the cubic millimeter; leucocyte count, 6000; hemoglobin, 75 per cent., rouleaux formation good.

Ewald test breakfast: The total quantity obtained was 30 c.c., the Gunsberg reaction positive; dimethyl titration showed 15 degrees of free acid indicating .05 per cent. of free hydrochloric acid, the total acidity 30 degrees; the biuret reaction was positive and strong, and the starch reaction also present and strong, indicating defective starch transformation.

The fasting stomach was found to contain considerable quantities of mucus and food debris, the former containing a fungus morphologically identical with actinomycosis. The fungi assumed the radiating form, with club-shaped bodies, numerous granules and, macroscopically, the whitish-yellow spherical bodies characteristic of this growth.

The liver was somewhat tender and slightly enlarged, with irregularities in the contour of its lower border, which, taken together with the putty-colored stools, led me to fear that I might have to deal with a case of actinomycosis involving the liver.

The patient was placed on gastric lavage, colon flushing and general hydrotherapeutic procedures consisting chiefly of hot and cold douches. The improvement began at once, and complete recovery ensued within two months. The only symptom remaining was very slight tinnitus in the left ear, which is sometimes absent for several days. No vertigo or gastric disturbance has been present for several months.

The relationship existing between digestion and the paroxysms of vertigo was so constant as to leave no reasonable doubt as to the causal relationship of the former. Added to this we have the complete disappearance of the vertigo consecutive to stomach treatment. So far as the aural findings are concerned, the case corresponds to a group described by Dr. C. H. Burnett, in which he says the vertigo is the result of chronic catarrhal otitis media. These cases he describes as paroxysmal in character, always associated with tinnitus and a certain grade of deafness, and followed sooner or later by nausea, vomiting, reeling, and falling. It is quite possible, in this case, that without the middle ear disease the vertigo might not have occurred. It seems equally certain, however, and indeed much more certain, that without the gastric disturbance the vertigo also would not have occurred.

From a clinical point of view, therefore, the stomach must be regarded as a necessary, and possibly an efficient, cause of the severe paroxysmal vertigo present in this case. It is reported because of the combinations of gastric and middle ear disease, the probable absence of labyrinthine disease, and the obvious relief of the vertigo as a result of intragastric treatment. In dealing with several hundred cases of chronic gastric disease I have found a considerable number in which vertigo was a more or less conspicuous symptom, developing *pari passu* with the gastric symptom and disappearing as they did. As a general rule, however, the vertiginous attacks have not the fulminating character shown by the group of cases commonly designated Ménière's disease, in which group some writers, L. C. Gray among them, include the vertigoes of external and middle ear as well as those of internal ear disease. In some of these cases of gastric vertigo, however, the attacks are distinctly cyclic in type. In one recent case the patient fell to the ground on several different occasions, and yet the most critical examinations failed to reveal any cerebral or ear disease.

Note—The patient above recorded called at my office about December 15, 1900, and reported that he had been entirely well during the interval since he quit treatment, with the exception of one or two attacks of vertigo of the same type, both preceded by obvious gastric disturbances.

DISCUSSION.

Dr. D. I. Wolfstein, Cincinnati, Ohio—I wish to report in connection with this paper a case which presents almost identical symptoms. The case was referred to me by an ear specialist, after having been treated by physicians, and he had not been able to find anything abnormal in the ear after careful examinations. The symptoms were almost constant, tinnitus aurium with such attacks of vertigo as the essayist describes, except that the attacks were as many as thirty or forty a day. The patient was a city salesman, and his business necessitated driving around through the city. He successfully treated himself after adopting the ordinary methods for mild stomach disorder, lavage, and the giving of an antiacid. He recovered completely and remained so until two months afterward, when he again presented himself with the identical symptoms he had had before. In the interim of recovery, the tinnitus was not relieved. He was given an aloin, belladonna and strychnin pill, and now presents himself for treatment, but he is not in a condition of recovery. These conditions of vertigo and tinnitus aurium make me think that they are probably to be compared with some other conditions we group under the idea of perverted ideas or symptoms that have become cerebral and not attached in any organic way.

Dr. H. H. Levy, Richmond, Va.—I offer my unqualified commendation of the Doctor's exhaustive research in this case; it commends itself to us for the method pursued in regard to the elucidation of the etiology. One thing that he stated was suggestive. From the examination of the urine he determined the proportion of uric acid to urea to have been 1 to 16. Uricacidemia is productive of varied nervous symptoms, and it may not be unlikely that that was a provoking cause of the nervous symptoms in this particular case. It is very common, as all of us know, to see cases of vertigo that we attribute to the stomach and liver. I should say in these cases that there is some defect in the working of the liver. We may have failure of performance of some action of the liver, even if we do not have jaundice. The liver is intimately concerned in the formation of uric acid and urea, and where we find cases of excessive uric acid, the proper process of digestion of the intestines is not taking place, and also excretion is probably imperfect. It is very common to see persons affected with vertigo, who are quite comfortable in the supine position. They are not at all anemic; the blood examination shows that, and the pulse indicates that there is no lack of blood, but they become very dizzy upon rising. Treatment directed to the proper action of the liver, as for instance the administration of hydrochloric acid and strychnin, has afforded complete alleviation of this condition. Another question is whether vertigo may not be due to real ptomain poisoning. I think it sometimes is, but that hinges on one point, namely, imperfect disposition of the food in the alimentary canal. Unless we can limit the patient to one meal a day, we can not tell whether a certain meal is productive of certain symptoms. If we can give the patient one meal, and in six, ten, twelve, fourteen or twenty-four hours, regularly and uniformly, certain effects are produced, then we have a right to say that there are certin ill effects produced by that particular meal. A great many cases of vertigo are simply due to improper digestion.

Dr. Hugh T. Patrick, Chicago—I should like to ask Dr. McCaskey to state a little more carefully the character of the vertigo in this case. Probably I did not get it fully as he read it. It is exceedingly important, in writing of the nature, cause or origin of any case of vertigo, to very definitely define the vertigo itself. I should like to say, for myself, that I have come more and more to look with great skepticism on vertigo of gastric origin and on liver or intestinal vertigo, and symptoms coming under that general head. Where there has been a real turning or rotary sensation, with inability to stand steadily or at all, the cause has ordinarily been found in the ear or somewhere in the cranial cavity, or it has been a case of heart disease, or a bad case of anemia—in other words, something strictly and determinably of organic origin. I do not remember seeing a case of well-defined, unmistakable vertigo of gastric or abdominal origin. A general feeling of lightness in the head, a general feeling of uncertainty and discomfort, which patients describe as dizziness or as vertigo, as well as the cases spoken of by Dr. Wolfstein, approximating agoraphobia, in which the patient is terror-stricken or panic-stricken and can not find himself, are exceedingly frequent, but they are separate and distinct from real vertigo.

Dr. G. W. McCaskey, Ft. Wayne, Ind.—Referring to Dr. Patrick's expression of his own skepticism as to the existence of vertigo of gastric or intestinal origin, I would say that the gentleman simply voices the sentiments of the average neurologist of to-day. This is undoubtedly the trend of neurologic thought, and in reaching a different conclusion I have done so on the basis of a rather large experience with gastric disease. A case which I have not quoted is one among a great many others I have seen—a case in which there was no suspicion whatever, of either cerebral or aural disease; one of the worst cases of gastro-intestinal disease I have ever seen. There was very intense gastric-motor insufficiency. That patient was taken into one of my rooms and placed on a table for examination, and it would take him two or three minutes to get up or lie down, the vertigo was so intense. So far as the adequacy of the gastric or gastro-intestinal causes is concerned, the patients have recovered without exception, and in this one the vertigo remained permanently cured upon curing the gastric disease. We must take into account the conditions to which Dr. Patrick has referred, as associated anemia, etc. —but why do they recover without recovery from the anemia? And why does the vertigo take place in the absence of anemia? I do not think it is fair on the part of physicians or neurologists to assume the existence of cerebral or aural disease, unless they can be positively demonstrated by examination. This case has been observed over a period of three years, and is absolutely well; no return of the vertigo or any development of what might have been at that time latent cerebral or aural disease. It is fair to assume that it does not exist in that case.

As to the character of vertigo, in this case it was a very sudden loss of balancing power. The patient would have fallen if he had not been supported, and when he had once lain down, he could not move his head from one side to the other. He could not look up suddenly without severe aggravation of the vertigo. Here is a case in which this symptom develops with the ingestion of a large quantity of food, and disappears with its rejection. I assume that we can attribute such a series of events one to another. I think the *post hoc* in this instance is fairly demonstrable to be a *proctor hoc.*

There was hepatic disease in this instance. There was bile pigment in the urine and feces, as demonstrated by the spectroscope. The presence of bile in feces is pathologic, not physiologic. The normal coloring matter present in the feces is not bile. There was no jaundice whatever. The only evidence of hepatic disease was enlargement and tenderness of the liver, with bile-pigment in the urine and fecal matter. I did not attach much importance to the large quantity of uric acid. The proportion of uric acid—the ratio—to urea was too large; it was 1 to 18. The absolute quantity was small, only 0.6 gram, which is less than 10 grains and is below the average. Even if it were 20 or 30 grains, I would regard it as a relatively unimportant phase of the case.

Dr. Wolfstein spoke of recurrence. I recognize the pertinence of that point, and I told this patient that, in my opinion, he was not well. He will return to me with this vertigo, because the gastric disease will recur. I confess that it is very difficult to determine the essential pathology of such a case, and yet, at the same time, I am forced by the honest study of the facts in these cases, to the conclusions that gastric disease is an efficient cause of vertigo, and while in this case there was associated aural disease, in many it does not exist, as far as examination will enable us to determine.

HEART TONICS.*

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In discussing the subject of this paper I must at the outset claim the license to consider it in its broadest sense, studying it from the standpoint of the clinician and therapeutist rather than from the technical ground of the physiologic action of drugs.

The term "tonic" should mean, when discussed in this way, the broad principle evolved by the therapy of any remedy, which shall have the power of regulating heart action, whether its irregularity be functional or organic or that modification of its conditions which renders the heart action a source of discomfort or danger to the patient. In dealing with functional disturbances which are the result of impaired reflexes, coming as they most commonly do, from disturbance of digestion or some uterine derangement, the indications for relief are plainly the removal of the gastric or uterine disorder back of the perturbation or irregularity, not forgetting that prolonged and persistent functional disturbance may result in organic change of the walls or valves of the heart.

Again, intelligent consideration of these agents and skilful exhibition must be absolutely based on an accurate knowledge of the pathology of the affection in which a heart tonic is indicated. A conviction that many times an improper drug for the fulfillment of the indications is selected and given, either with no benefit or with directly harmful results, has been the inspiration of this paper.

Selecting those drugs most popular as heart tonics, and most frequently exhibited, I shall consider their physiologic action and then the indications for their therapeutic application, reserving to myself, as I have already indicated, the right to discuss agents which, under a strict classification, are to be considered as cardiac depressants, but yet are, in the broadest sense, indirect heart tonics, because they regulate heart action.

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Why not if it be excessive and too strong. I emphasize this point, because it is not a new thing to see digitalis given to relieve a patient suffering from disturbed heart action, excessive in tension, because of hypertrophy—the result of valvular or renal lesion or of long-continued and excessive stimulation of the vagus due to excessive use of tobacco—when really it is emphatically contraindicated, and the truest tonic, calmative and comforting to the patient, is an agent like aconite, nitroglycerin or veratrum viride belonging to the class of pronounced motor depressants.

On the other hand, agents like these, nitroglycerin especially, are frequently exhibited to sustain heart action when strychnin or digitalis may be imperatively demanded to prevent sudden and absolute heart failure.

Digitalis.—Physiologic action is most pronounced in the beginning by slowing of the heart's action, increased arterial tension and lengthening of the diastole. These are due to the stimulation of the vagus, cardiac motor ganglia and inhibitory centers, though some authorities claim its action is directly on the muscular walls of the heart which act with increased power, filling the bloodvessels more perfectly and fulfilling the conditions of a perfectly normal circulation. But continued administration results in greater frequency and diminished arterial tension, due to exhaustion from over-stimulation of the vagus, etc. In the first stage of its action there is a contraction of the arterioles of the kidneys, diminished elimination, consequent on over-stimulation of the vagus, and secondary cardiac depression. As a result of these conditions, digitalis is a remedy of uncertain value, because a secondary condition of depression may result from its exhibition, and at a time when it would jeopardize the welfare of the patient.

To be more explicit, in mitral regurgitation, the lesion in which it is conceded to be most useful, in the earlier stage when we wish to sustain heart action until compensation is established by a physiologic hypertrophy, I question whether the drug can be limited to its first effect until compensation is established; and in the later stage, when compensation fails and the heart is already depressed and exhausted, digitalis is evidently contraindicated. Digitalis is, to say the least, a remedy of transient benefit in mitral regurgitation and may be positively harmful in its ultimate results. But this is the most favorable standpoint from which to consider the drug. In fatty change in the heart walls, the stronger contraction of the heart in systole on the contained blood results in a muscular strain, thus increasing the dangers of rupture of the cardiac wall.

In the threatened heart failure of typhoid fever, benefit must accrue from the exhibition of such an agent as can be continued long enough to tide the patient over the critical period. The heart muscle, as the result of long-continued high temperature and impaired nutrition, is in a condition of granular, degenerative myocarditis. Any agent which stimulates the cardiac ganglia, inhibitory center or vagus under such conditions must be harmful to the patient in the highest degree; and when the exhaustive stage is reached, serious danger of fatal syncope may be expected as a legitimate consequence. Hence in fevers, septicemia and like affections, digitalis and all agents of similar physiologic action are positively contraindicated. Nor is this all: Careful observation has demonstrated that digitalis does not increase pulse tension in pneumonia. It is suggested because of the febrile condition. But another patent fact must be considered, namely, that with the lesion in the lung—hepatization, most probably—the threatened heart failure is the result of exhaustion. The heart tires from an ineffectual effort to keep up the circulation through solidified lung, and the compensatory respiration carried on by the remaining or partially congested tissue does not aerate the blood rapidly enough to save the strain on the tired heart muscle. It is like lashing a foundered horse to force him to renewed exertion of which he is incapable.

Again, in mitral stenosis, benefit is to be expected from the exhibition of digitalis because prolonged diastole allows the ventricle to receive a larger quantity of blood. Its greatest field of usefulness is in lesions of the mitral and tricuspid valves, with their resulting secondary lesions. But in aortic stenosis, the forcible contraction of the ventricle during systole, with obstruction ahead of the column of blood, is risky, because rupture of the heart wall may result. Nor is the danger less in aortic insufficiency. Lengthened diastole permits overloading of the ventricle, and again danger from heart rupture is at the maximum. I believe that it is commonly routine practice to prescribe digitalis or kindred remedies when valvular lesions are detected, without making a discriminating diagnosis, and this ought not to be.

Convallaria.—In its action this drug is similar to digitalis and it is used under similar therapeutic indications. A fact of some importance is that it may be used as supplemental to digitalis. Its advantages over the latter are: 1. It is more strictly limited to the heart. 2. It does not prolong the diastole to the same extent, but slows cardiac action while augmenting the force of ventricular contraction. 3. It is probably free from the danger of cumulative action, and therefore may be given for a longer period. 4. It is probably better borne by the stomach, though the experience of observers differs in this respect. 5. Its diuretic action is not so distinct as digitalis. 6. It is of value in correcting cardiac rhythm. It must, however, be acknowledged that it is not so strong or reliable as digitalis.[1]

Spartein.—This is a true stimulant to the muscular substance of the heart, acting through the cardiac ganglia, and in my hands has been valuable, when the heart walls were flabby and weak. It has been recommended as a heart stimulant in anesthesia.[2] Spartein, too, has the advantage of being slowly eliminated.

Strophanthus.—There is diversity of opinion among observers as to the true physiologic action of strophanthus; some claiming that its effect is less permanent than that of digitalis. If it be given in combination with strychnin, this objection is obviated, and it possesses the advantage of acting on the heart muscle and muscular coat of the blood-vessels, thus avoiding the reaction which comes from exhaustion of the vagus when digitalis is used. I am not, however, prepared to admit, as the result of my observation, that its action is less permanent than digitalis. After compensation has failed, stimulation of the tired heart muscle by strophanthus, while the vagus is still active, is of considerable value. In the threatened heart failure of typhoid fever and the septicemias, given with strychnia, it will be found a very useful agent.

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[1] Westbrook: Foster's Practical Therapeutics.

[2] Cotton, G. C.: N. Y. Med. Jour., Nov. 26, 1896. Foster's Practical Therapeutics.

Atropin.—Its physiologic action is to stimulate the cardiac sympathetic, the accelerator apparatus of the heart, producing increased frequency and increased tension and at the same time to lessen the inhibitory apparatus. It must not be pushed to the point of exhaustion. Its greatest usefulness is in tiding the patient over an emergency, in cases of sudden collapse and threatened heart failure. Some of the cases of flabby, fatty heart, especially those in which we have bronchorrhea as a sequence of the impaired action of the heart, and in which also there is risk to the patient from threatened stoppage of the heart, and from interference with respiration by the flooding of the bronchial tubes with mucus, are peculiarly benefited by atropin because it deals with both these conditions. A respiratory stimulant as well as a cardiac, it strengthens respiration and stops the effusion of mucus by its drying effect on the bronchial mucous membrane. I think, however, it is always important that it should be combined with strychnin. Potter recommends its use hypodermically in threatened heart failure from chloroform narcosis.[3]

Caffein.—Caffein stimulates and then depresses the cardiac ganglia as well as the cardiac muscle. Its chief field of usefulness is in functional heart affections, or as an adjuvant in those cases of organic heart trouble in which the function of the kidneys needs to be stimulated, to get rid of dropsical effusion. It is not curative in this instance but adds much to the comfort of the patient and aids in prolonging life. I have found caffein, when given in combination with benzoate of lithium and sulphate of spartein, especially useful in the dropsical conditions of parenchymatous nephritis, associated with secondary heart involvement.

Strychnia.—Close clinical observation has constantly increased my confidence in this agent, and demonstrated its reliability for definite results. Not the least part of its adaptability as a heart tonic is that, like other bitters, it is a stomachic tonic also, strengthening digestion and improving assimilation and nutrition. "It stimulates the motor nerve cells of the spinal cord, the cardiac motor ganglia, the respiratory and vasomotor centers in the medulla, and the sensory nerves and their terminal elements. The result is that respiration is deepened and quickened, the action of the heart is increased and the blood-pressure raised."[4] In the enfeebled heart action from chloroform narcosis, it is a valuable remedy, and it has become almost routine practice with me to precede the administration of chloroform by giving, hypodermically, 1/30 to 1/20 gr. of nitrate of strychnia. Its value, administered as a safeguard, will be appreciated, when we remember that death from chloroform is due to paralysis of respiration, or paralysis of the heart, or to the two combined plus the shock of operation. Strychnia directly antagonizes these conditions. In the enfeebled heart of typhoid fever, the septicemias and pneumonia, or in the syncope due to heart failure I know no remedy so potent and prompt to sustain heart action. In functional reflex cardiac disturbance, weakened irregular heart action, the cardiac disturbances of the climacteric complicated by exhausting hemorrhage; in the weakened heart action in the later stage of Bright's disease, after compensation has failed and arterial tension has given way, resulting in an ischemic condition of the blood-vessels; strychnin in all these conditions fortifies heart action. The superiority it has over digitalis and other heart tonics of its class is demonstrated by the fact that there is no cumulative depressant second or third stage. Nor will its ability be disappointing in organic valvular lesions of the heart when the heart muscle needs support in the performance of its function. The fact that it may be pushed for a longer time and gives satisfactory and definite results places it at the head of heart tonics.

Nitroglycerin.—We hear this agent spoken of, and see it mentioned in many articles of current medical literature, as a heart tonic. Experiment has demonstrated that it produces death by general paralysis, especially of the muscular system; and autopsy shows the ventricles of the heart unequally dilated, the right more so, and the venous system engorged with blood. It lowers arterial tension, and in an engorged right heart is useful, combined with strychnia. Physiologically we have languor, nausea, rapid, weak, dicrotic pulse. It also impairs muscular contractility. Its most beneficial action is found in angina pectoris, both true and pseudo. I am persuaded that its use is contraindicated in the weak and impaired heart of typhoid fever, septicemia, and surgical shock. No agent can be safely administered to sustain heart action, and avert death from heart failure whose physiologic action is known to be first, depression of the medullary center, consequent threatened paralysis of respiration and marked paralysis of the muscular system.

Opium.—In conclusion, I would say a word on opium as a reliable heart tonic. The clinical significance of its beneficial action on the weak heart I have seen repeatedly exemplified. When, after a long continuance of typhoid fever, the stage of coma vigil, vasomotor paresis, general, but especially marked in the accumulation of gas in the intestines; feeble, dicrotic pulse; dusky hue of the cutaneous surface, especially the face; in fine, that clinical picture so familiar to us all, and indicative of the great jeopardy of the patient, opium in a commanding dose, repeated in a few hours if necessary, has changed the whole aspect of the case, and proved the pivot on which the case has turned to a prompt and sure convalescence.

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DISCUSSION.

Dr. W. D. Garlock, New York City, said that there is one point which is frequently overlooked in the treatment of weak heart, i. e., the state of the blood. We have a mechanical problem of an engine—the heart—driving a weight of blood through the blood-vessels. If the blood is poor, the required quantity of the blood in increased, and the weight being thus increased, more work is thrown on the heart. If we, by appropriate treatment, improve the quality of the blood, we to that extent reduce the labor of the heart, for the tissues will not demand so much blood for their nutrition.

Dr. Reilly, New York City, asked if the reader had an opinion to communicate as to the value of cactus grandiflora as a heart tonic?

Dr. J. N. Upshur said that his experience with cactus grandiflora had been very slight. He had used it, especially in one condition in which there was a condition of debility, a depressed condition of the heart, the result of excessive use of tobacco. In his part of the country he often sees cases of tobacco heart. He likened it to the fiddler who keeps constantly tightening up the string, until the string snaps. In the same way, the persistent overstimulation of the heart by the tobacco finally leads to heart failure. In the case of a prominent clergyman in Richmond, who did not respond well to strychnin, he had given cactus, but it did not give him as much relief as it should and he finally got relief from strychnin in large doses. We see so many patients who are stimulated too much with tobacco, but none of them will admit that they are slaves to the habit. He has one challenge by which he can prove to them that they are taking too much and are under its stimulating effects. He challenges them to stop using tobacco, for a time, to see what an outcry there will be of the system against the stoppage, and the consequent gain in the pulse-beat after using the tobacco. If you take any machine and constantly drive it from one-third to one-half above its capacity it will break down. In the heart we have the same thing. There is a certain influence of the living tissue against the tobacco, but it will finally break down. The consequence is depressed action of the heart, and especially in young men, and particularly from excessive cigarette smoking. When such a person is taken sick with some serious illness, like pneumonia, then the heart tonics fail us, and they die of heart failure, when they should get well.

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[3] Potter: Practical Therapeutics, p. 131.

[4] Potter: Foster's Practical Therapeutics, p. 26.

Dr. J. T. Melvin, Saguache, Colo., said that he had used cactus as supplementary to strychnin, but not as a substitute for it. His own experience is that the best results from cactus are obtained when the disturbance of the heart is functional. In all cases in which the disturbance is unconnected with organic disease, we have in cactus a useful agent. In digestive and genital disorders we often have reflex disturbance of the heart, also in tobacco and coffee habits. He gives, in such cases, the fluid extract in five-drop doses several times a day.

Dr. Leonard Corning, New York City, said that he had used strychnin and found it beneficial on a smoker. The only objection is that when using strychnin he smokes twice as much.

Dr. Heinrich Stern, New York City, said that the author of the paper under discussion had omitted any reference to adonidin. In his investigations adonidin proved the very best and the most efficient of the so-called heart tonics we possess. Adonidin is not a mere succedaneum of digitalis. It is true, the physiologic action of both agents is identical to a certain degree. However—and this part he wished particularly to emphasize—adonidin, in spite of its more prompt and energetic action, may be safely administered in such cases where digitalis and the so-called other heart tonics can not be employed at all or only with the greatest caution; such, for example, as fatty degeneration of the heart, pericarditis, atheroma and heart lesions accompanying chronic cases of nephritis. He said he had never noticed a cumulative action of the drug, and in all instances in which he employed it, whether it was administered in the form of powders, tablets, pills or solution by the mouth, or in that of suppositories by the rectum, or by hypodermic injection, it was always well borne. The dose of the drug varies, according to the object desired, from .002 gm. to .01 gm. Those who are interested in the subject were referred to his original article, in *Merck's Archives*, April and May, 1900. He said, too, that adonidin deserves a place right on top of our list of heart remedies.

THE THERAPEUTIC APPLICATION OF THE ORGANIC EXTRACTS.*

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A few years ago we listened with interest, wonder, and often incredulity to a paper on organic extracts, but since that time we have heard so many papers and read so much on the use and abuse of these extracts, that one feels like apologizing for talking on this subject.

We can no longer treat of these internal secretions together, but each one now claims a separate discussion, and if you will bear with me I will try to present a few facts and thoughts concerning the thyroid, thymus, pituitary and suprarenal glands.

Though Schiff had experimented in 1859,[1] he did not impress upon the profession, the scientific value of his experiments on thyroidectomized dogs until 1884.[2] Horsley and other observers[3] have confirmed Schiff's work, and Halsted[4] has shown the interesting fact that removal or injury of a portion of the thyroid can stimulate the rest of the gland to furnish secretion enough for the whole body. In 1878, Ord[5] showed the relationship between the thyroid gland and myxedema. Horsley, in monkeys, and Reverdin,[6] in man, described the symptoms of operative myxedema, while Kocher[7] noted these symptoms of operative myxedema did not occur when the thyroid was removed in old age; a very interesting fact.

Schäfer[8] describes the symptoms of operative myxedema as tremor, mental apathy, unsteadiness of gait, diminution of the cutaneous sensibility, lowering of the temperature, drying of the skin, falling out of the hair, and an increase of mucin in the connective tissue, especially of the skin. These symptoms known to be caused by the removal of the thyroid, are all exceedingly interesting when we realize that a diminished secretion of the thyroid in man can be the cause of similar symptoms and yet the diminution of secretion perhaps not be sufficient to cause an actual myxedema. It is also therapeutically noteworthy that all of these symptoms can be prevented in thyroidectomized animals and men by feeding thyroid extracts.

In 1895 Baumann discovered iodin in the thyroid, which has since been proved to be the only part of the human body in which the iodin is normally contained, and Weiss[9] estimates that the adult thyroid contains .004 of this element, the amount varying at different times and in different localities and at different ages, the greatest amount being found between the ages of 25 and 55.[10]

The feeding of thyroid extract or Baumann's iodothyrin causes loss of weight and an increased nitrogen, sodium chlorid and phosphorus—P_2O_5—excretion and marked diuresis.—Ross.[11] It is very probable that this diuretic action is due to the increased amount of urea excreted, although all of the nitrogen increase is not in urea formation.

Cyon,[12] finding vasodilator fibers in the thyroid nerves and that their stimulation lowers the pressure in the carotid arteries, infers that a function of the thyroid is to regulate the circulation and prevent hyperemia of the brain.

Oliver and Schäfer[13] have shown that the thyroid contains a substance which will cause marked fall of the blood-pressure, and J. L. Smith[14] says that thyroidectomized animals show abnormally rapid reaction to changes of temperature, in other words, show a disturbance of the heat-regulating mechanism. This latter is to me a very important fact when we consider the lack of development of the thyroid in the young child and the child's susceptibility to every change in the atmospheric temperature.

The thyroid also seems to be a regulator of connective-tissue formation, and the less the thyroid secretion in the adult, the greater the connective-tissue growth.

In partial support of the theory that it is the purpose of the thyroid gland to render innocuous certain toxic substances circulating in the blood, is the fact that the urine of animals after removal of the thyroid becomes more toxic than that of normal animals.

So much for thyroidal experiments, but unlike other drug investigations we have the pathology of the thyroid to aid us in formulating the therapeutic indications. In cretins this gland is either absent, very small, or cystic, and the colloid material, the representative of thyroid activity, is absent from most of the alveoli—de Coulon.[15]

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In myxedema the thyroid is found atrophied and the glandular parenchyma replaced by more or less connective-tissue formation, the colloid material diminished, and the iodin content decreased or nearly absent.

In the beginning and during the activity of Graves' thyroid disease—exophthalmic goiter—there is a hyperplasia of the thyroid parenchyma, and therefore an increased glandular output.[16] Later, which is probably the normal cure of the condition, we may find a fibroid or connective-tissue degeneration, and the gland ceases to excrete in excess.

If any one doubts that Graves' disease is a hypersecretion of the thyroid, he has only to consider that in at least 90 per cent. of all cases this disease occurs between the ages of 20 and 40, or the most active period of the thyroid-gland secretion. Also that this increased secretion, like thyroid feeding, causes loss of weight and that there is lowered blood-pressure, cardiac palpitation, hot flashes, profuse sweating, great mental activity, insomnia, diminished peripheral electrical resistance, which symptoms are the exact antithesis of those of myxedema. Also in explaining many of our neurotic conditions and so-called neuroses, we can but presume that there can be all ranges of thyroid secretion, from sufficient diminution to cause myxedema to the excessive amount which causes Graves' thyroid disease, and hence we may have the thyroid as a cause of many of our cerebral, vasomotor and cardiac functional disturbances.

To sum up the physiological action of the thyroid: It seems necessary for the proper equilibrium of the central nervous system, and perhaps nutrition and development of it; to the proper quantity of mucin that shall appear in the tissues, principally the connective tissues; to regulate the proper amount of connective tissue, especially of the skin; to the proper organization of P_2O_5 for the assimilation into bone salts; and by its vasodilator power, to the proper regulation of the peripheral circulation, thus regulating the heat loss at least and the normal insensible perspiration which, if disturbed, shows, on the one hand in the drying of the skin in myxedema, and on the other hand in the increased sweating in Graves' thyroid disease. Also this gland seems to have some power of regulating the rapidity of the cardiac contractions.

This gland is easily excited to hyper-secretion temporarily by emotion, and normally by menstruation and pregnancy, this probably being the cause of the more or less persistent increased secretion and consequently more frequent hypertrophy in women than in men, and 80 per cent. of all cases of Graves' thyroid disease occur in women. It is also interesting here to note that this gland normally seems to be a cause, if not the cause, of the dilated condition of the blood-vessels of the uterus, periodically allowing the leakage from the blood-vessels, or menstruation.

Also between the ages of 40 and 50 this gland shows signs of overwork, and atrophies more frequently in women than in men, as shown by 80 per cent. of all cases of myxedema occurring in women.

In the normal individual a small dose of thyroid would be little noticed, at least not for a long period, but when large doses of either thyroid extracts, thyroid glands, or iodothyrin are given for some time, there will be nausea and vertigo with increased cardiac action and tendency to increased sweating and diuresis, with possibly faintness, cerebral irritation and tremor, and according to Betmann,[17] an alimentary glycosuria may be produced.

As to the therapeutic uses of thyroid substance, its value in cretinism, myxedema, and operative myxedema requires no discussion, as all of the symptoms are kept in abeyance by thyroid feeding.

The use of thyroid extract in simple goiter is still subject to investigation. Theoretically, we could only expect that thyroid feeding would act in this condition as when fed to any normal individual, and I can not but doubt the special value of thyroid treatment in simple goiter, and think if the treatment was pushed it would do considerable harm, and if any good was done such a case by thyroid extract, it might be just as much benefited by small doses of other forms of iodin. As the size of the goiter will so frequently diminish under varied treatments, especially the iodin treatment, and then relapse and perhaps again diminish, it makes the statistics of any one treatment very doubtful and the subsequent watching of the case very important.

Believing as I do that Graves' thyroid disease is due to a hyper-secretion, the thyroid extract would be contraindicated during the continuance of the active symptoms. Clinically, I believe this to be well borne out, as all of the symptoms, such as nervous excitability, headache, sweating, flushing, sleeplessness, and loss of weight are increased by thyroid treatment during the activity of the disease. On the other hand, we know that this disease tends to recovery, that this hyper-secretion reduces to normal secretion sooner or later in most cases. Also it is barely possible that a hyperplastic gland may take on the next stage, as is so perfectly typical of other organs of the body, and perhaps have connective-tissue formation, and if not actually diminished in size, may have its glandular elements lessened so that we get a condition of under-secretion with the putting on of weight, muscular weakness, and mental sluggishness, in other words, possibly the first stage of myxedema, which goes no farther. These cases will be benefited by thyroid extract.

The rule I wish to suggest in regard to thyroid treatment in Graves' disease, is: If there is cerebral excitement, palpitation and progressive loss of weight, thyroid treatment is contraindicated; if the patient is sleepy, apathetic, palpitation is not bad, has no headache, and is putting on weight, thyroid treatment will probably benefit the case.

Leichtenstern and Wendelstadt[18] were the first to use thyroid in the treatment of obesity, and there seems to be no question that in favorable cases the fat diminishes, but at the same time there is a large increase in nitrogenous elimination. It is probable that every case of over-weight especially after 40 years of age can be reduced by larger or smaller doses of thyroid extract, daily, provided that there are no ill effects from the treatment; but unfortunately there is considerable risk of causing more or less persistent and troublesome debility. The patient may not begin to lose weight for the first two weeks, and then he loses more or less rapidly, from two to five pounds a week, or even more, and it must be remembered that he will continue to lose weight for some weeks after the treatment has ceased. The starting dose should be about 3 grains and perhaps run up as high as 10 grains two or three times a day to get the best results.

The unpleasant symptoms are nausea, loss of appetite, and easily excited heart, with short attacks of palpitation, troublesome weakening perspiration, at times *cold* hands and feet, and a general muscular relaxation and debility, possibly with attacks of syncope, and in one case the writer has seen an epileptic form of convulsive attack which he could attribute to no other cause. These symptoms are very similar to the early symptoms of Graves' thyroid disease, in other words a hyper-secretion of the thyroid.

The loss of weight, as above stated, will continue for some time after the thyroid feeding has ceased, unless the feeding has been given too long. In either case there comes a time when there seems to be no more loss of weight. With the diet the same and the feeding the same, there are weeks during the treatment in which there is no loss at all, but the next week may bring the loss of weight up to the average. For the treatment to be successful, a modification of the diet does not seem necessary. Whether the improvement in weight becomes permanent or not can not be foretold, but the majority of patients who continue their habits of over-eating, or in whose families obesity is hereditary, will quickly again put on weight.

If, as I think possible, one of the factors in causing the over-weight in adults after 40 or 50 is the diminished secretion of the thyroid, especially in women, it would seem physiologically correct that after this weight had been reduced by thyroid feeding, a small daily dose would prevent the recurrence of the fat. In other words, treat the case as we do a cured case of myxedema, only the dose of the thyroid required will probably be less. Thyroid extract has been satisfactorily used in juvenile obesity.[19]

As to the use of the thyroid in skin diseases, we could expect it to cause a better nutrition of the skin and more active superficial circulation and stimulation of the sweat glands, and possibly sebaceous glands, and a consequent increase of the activity of the corium and throwing off of the epithelium, thus getting rid of an old epidermis. This action of the thyroid has been demonstrated to be of practical value clinically in such conditions as dry scaly eczema and in psoriasis.

Although this treatment has come somewhat into disrepute with dermatologists owing to its debilitating properties, I believe that too large doses have been used, and that smaller doses would answer the same purpose and cause no debility. In fact when we consider the amount of secretion which a ductless gland gives to the circulation daily, we can not but see that the use of large doses, except in certain conditions, is entirely unjustifiable.

Thyroid will probably be found to be especially good treatment in the dry eczemas of old age, possibly in the itching due to the drying of the skin at this time of life, and the writer has found it of value in the so-called strumous conditions of young children.

I think very probably that young children with dull heavy features, fat, with flabby condition of the flesh, tendency to mucous discharge from the nose, with persistent cracks and fissures either at the openings of the nares, at the corners of the mouth, or back of the ears, and with recurrent irritation of the skin on the nates, may have diminished thyroid secretion, but not sufficiently diminished to cause a cretin. Such cases I have found to improve under the treatment of thyroid. I have also found enlarged glands in the neck to become normal in size under this treatment.

The fact that the hyper-secretion of the thyroid, as in Graves' thyroid disease, increases the cerebral irritability, causes excitation and even in some few instances mania, and on the other hand the mental hebetude which occurs in cretins and in myxedema, has caused this substance to be used by alienists[20] in cases of insanity.

It is easily supposable that a secretion which has a vasodilator substance and therefore, perhaps, power to regulate the circulation of the brain, might cure functional mental derangements, but we do not believe that it could cure actual cerebral degeneration. In line with this suggestion, alienists have found that a prognosis can often be made in cases of insanity by the results of trial with this treatment. Certainly in cases of melancholia where the brain needs to be excited and stimulated, or in cases of hypochondriasis, thyroid treatment would seem to be indicated, and Starr[21] believes in the use of this drug in the mental disturbances occurring at the time of the climacteric. I have recently had a patient with melancholic hysteria who had not spoken for five or six weeks, who, under the treatment of small doses of thyroid, began to act more like herself and answered questions put to her after five days of the treatment. During these five days absolutely no other treatment, method or suggestion was used.

The thyroid function being so closely allied to the menstrual function, it can not but show disturbance at the cessation of the latter, i. e., at the menopause. If the thyroid should rapidly diminish its secretion at this time, we have the condition of myxedema which occurs, as above stated, in 80 per cent. of all cases in women. If the thyroid at this time gradually diminishes its secretion, we probably have a most comfortable establishment of the menopause. If, on the other hand, as is fairly supposable, it does not diminish its secretion synchronously with the stoppage of the menstruation and therefore relatively hyper-secretes, we have all of the disturbances of hot flashes, nervousness, palpitation, etc., which are so characteristic of many women during the climacteric, which condition I believe should not be treated with thyroid. If, on the other hand, there is a marked putting on of weight at this period, we probably have too rapid diminution of thyroid secretion and small doses of thyroid extract would probably be good treatment.

As the thyroid atrophies in old age, the question occurs: Is it one of the factors in producing the conditions present in old age?[22] It is not supposable that increased blood-pressure might be due to diminished thyroid secretion and therefore diminished dilator power, and that the suprarenal with its blood-pressure raising power has now full sway, and as a consequence we get the diseases and conditions due to increased blood-pressure, such as endarteritis and all of its manifold consequences. Also the diminished secretion of the thyroid can increase connective-tissue formation and therefore sclerosis in various parts of the body, as we see no exaggerated myxedema. Also is not the drying and wrinkling of the skin in old age due to this same diminished secretion? Certainly it would be worthy of trial to see if with small doses of thyroid we could keep the blood-pressure down and render the dangers of atheroma more remote.

Bell's[23] suggestion that carcinoma of the uterus developing at the time of the menopause, as it most frequently does, is due to diminished thyroid secretion and that the growth is retarded by thyroid feeding, is certainly very interesting. As carcinoma, and especially the epitheliomatous variety, is largely a condition of middle and later life, and as we know that a wart or irritated spot, either fissure or cicatrix, becomes liable to carcinomatous growth most frequently after 40, the possibilities of thyroid treatment perhaps tending to prevent recurrence after extirpation of the local lesion, I believe should certainly be considered.

Thymus.—As this gland atrophies in childhood and disappears after puberty, it is probable that it performs some important function in the development and growth of the young child. If it performs any other function, some other gland or glands evidently assume such work after the age of puberty.

We know little of the physiological action of the thymus gland preparations, although Svehla[24] found that venous injections of extracts from this gland caused acceleration of the pulse by direct action on the heart, and the lowering of the blood-pressure by paralysis of the vasoconstrictors.

Good clinical results from thymus feeding in Graves' thyroid disease in cases where the thyroid treatment caused an increase of the symptoms, would seem to show that any vasodilator substance contained in the thymus was not absorbed from the stomach, but Cunningham[25] has demonstrated that thymus tissue can modify the acute cachexia in thyroidectomized dogs as well as the thyroid treatment.

Mendel[26] has lately proved that thymus gland both in man and animals contains no iodin, and traces found in any given specimen are as accidental as are traces found in any other part of the body outside of the thyroid. The thymus gland contains a large quantity of nuclein, and hence a large amount of phosphorus.

The pathology of this gland is but little known, neither do we know what relationship some of the earlier functional diseases of the infant may bear to it, such as rickets. So-called strumous conditions of young children are perhaps related to malfunction of the thyroid more than to the thymus.

The use of thymus extract therapeutically as yet is empirical. The writer has given the thymus treatment of Graves' thyroid disease a careful trial, and feels convinced that it is often of decided value, but that it is not curative.

Kinnicutt's[27] report of a trial of thymus in pulmonary tuberculosis is certainly suggestive. If the thymus has something to do with the formation or the preparation of the salts for bone growth, it may furnish earthy salts in an assimilable form for the natural cure of tuberculous deposits, at least it may work similarly and perhaps better than hypophosphite treatment. I believe that the subsequent loss of weight after the primary gain in Kinnicutt's cases may have been due to too large doses having been given. As the thymus is so rich in nucleins and phosphorus, it could be used as a substitute for any nuclein treatment.

Pituitary Body.—Not only [illegible] and hystologically, but also [illegible] d is divided into two parts. The anterior part or hypophysis is decidedly glandular, and resembles thyroid tissue. The posterior lobe or infundibulum is largely composed of nervous elements, and Howell[28] has found that it is this part that furnishes an extract which when injected into a vein will raise the blood-pressure and increase the heart's action. This constrictor action of the blood-vessels is a peripheral one.[29] The hypophysis has been found not to furnish any such secretion.

Pathologically we have not yet separated the consequences of the disease of one part of the gland from the symptoms due to disease of the other part. Physiologists[30] have simply shown that when this gland is removed from cats and dogs, death occurs with symptoms not unlike those of thyroid extirpation, which symptoms are ameliorated by injections of pituitary extract.[31]

The pituitary body is, I believe, always diseased in acromegaly. I believe that acromegaly is probably in the beginning always a condition of giantism; in other words, *sooner or later in every case of giantism the condition of acromegaly or asymmetrical growth will more or less markedly develop.* I believe that the pituitary furnishes a secretion which has something to do with the normal growth of the body, and that giantism is due to a hyper-secretion of the pituitary, and that acromegaly is due to a disordered secretion of this gland.

In well-marked cases of acromegaly, the pituitary is generally found in an adenomatous or sarcomatous condition or in cystic degeneration. Reported cases of tumor growths in the sella turcica without symptoms of acromegaly probably had normal secretion furnished by some portion of this gland, as has been so many times instanced in tumors of the thyroid, pancreas and suprarenals.

The relationship of the hypophysis to the thyroid gland we do not know, but it is interesting to note that in many cases of thyroid disease the hypophysis is hypertrophied, and also in most cases of acromegaly, I think always, the thyroid is found enlarged.

I have tried pituitary feeding in three cases of acromegaly. In the first case the disease was in the very last stage, and as I treated him at a distance, and as he died in three or four months after I first saw him, I was unable to note the results of the treatment. In the second case the persistent headache and a considerable amount of the hypertrophy of the lips, hands and feet disappears under the pituitary treatment. If the pituitary is stopped, these symptoms again return to again disappear on return to the treatment. This case has also been greatly improved in muscular power since beginning the pituitary tablets. The third case, which is in the beginning of the condition, although the symptoms are well marked, is in the case of a boy 15 years old, who has been a semi-idiot all his life, and has lately grown enormously, and gives all of the external marks of acromegaly. About a month ago he developed intense and persistent earache, but examination of the ear could give no cause for such pain. I then began pituitary treatment and the pain has entirely disappeared, whatever this may mean.

It is fairly supposable that with this treatment in acromegaly we can prevent the continued growth of the body and the subjective symptoms of headache, neuralgia, muscular weakness, etc.

Suprarenal.—In 1856 Brown-Séquard[32] showed that removal of the suprarenal bodies from animals caused them to die with symptoms of shock, but that feeding of suprarenal tissue to such animals prolonged their lives, but did not prevent death, this being a different result from that obtained in operative myxedema, where thyroid feeding will prevent death. This is in perfect harmony with the later experiments which show that all of the active principles of suprarenal are not absorbed from the stomach and intestines. Later experimentation showed that if the suprarenals were injured by crushing[33] symptoms similar to Addison's disease will develop.[34] Addison, as early as 1855, pointed out the relationship between pathological conditions of the suprarenals and profound anemia with brown pigmentation of the skin and mucous membranes.

Schäfer and Oliver[35] were the first to show that the medullary part of the suprarenals contained an element which, when injected intravenously, would raise the blood-pressure higher than could be accomplished by any other known substance. Moore and Purinton[36] seem to have proved that this crude medullary extract is many times more powerful than any so-called pure product yet obtained.[37] They also showed that no blood-raising effects could be obtained from suprarenal administration by the mouth, although this is denied by other observers.

It is interesting to note that this active blood-raising principle is absent from the suprarenals of the human fetus,[38] although we do not yet know the exact age at which this gland furnishes such a secretion.

Boruttau[39] says that when dilatation of the arterioles has been caused in the muscles by their activity, the suprarenal secretion causes vasoconstriction, especially of the splanchnic system, which gives compensation and protects the brain and spinal cord from anemia, as the thyroid gland protects the brain from hyperemia. This may be an explanation of the sudden stupefying hyperemia which occurs when severe and violent muscular exercise is suddenly stopped, as is seen so many times in the crew of the racing boat after the finishing point has been passed.

The literature on the subject of the relationship of Addison's disease to the suprarenals is vast,[40] but we have Addison's disease with degenerated suprarenals and with intact suprarenals, and extensive degeneration of the suprarenals without Addison's disease, showing, like the relationship of diabetes to the pancreas, that there may be several functional or pathological causes for the condition, one of which seems to be unquestionably the disease of the adrenals. This has been well pointed out by Adami.[41] It is interesting to note that in Addison's disease with degeneration of the suprarenals an extract of this gland is devoid of any blood-pressure raising element.

Through Dr. Bates'[42] and Dr. Swain's[33] efforts, the action of suprarenal extract in the eye and nose, respectively, is pretty generally understood.

The writer has had repeated success in aborting follicular tonsillitis by cleansing the tonsils with a saline solution, swabbing with peroxid of hydrogen, and then spraying with suprarenal, and repeating this treatment in twelve hours. The congestive stage of acute urethritis will also be benefited by injections of suprarenal solution. The strength of this solution for local application on the mucous membranes varies from 5 to 10 grains of the desiccated suprarenal to a fluid dram of water.

While the local use of suprarenal is positive, the results of internal administration of this gland are still, in my opinion, problematical, except for the possible absorption of other constituents of this gland than the blood-raising principle. Certainly in Addison's disease suprarenal extract should always be administered for the possible good from the elements of the gland which may be absorbed.

Reasoning by analogy from what we know of the action of the thyroid, we can believe that the secretion from the suprarenals could be so decreased as to give typical Addison's disease, or any degree between the normal and that degree of diminution, and give symptoms accordingly. Also it is reasonably supposable that these glands could furnish a hyper-secretion similar to a Graves' thyroid disease when the symptoms, instead of being those of vasodilatation as in the latter disease, would be of persistent high blood-pressure. It is barely possible that a hyper-secretion of this gland is one of the causes of general arterio-sclerosis and gout.

Moderate feeding of thyroid extract in these conditions, as stated under thyroid, not sufficient to produce much loss of weight; in other words, in very small doses, might be a physiological antagonist of no mean value in preventing trouble from high blood-pressure.

Unfortunately I do not find that we can raise the vascular tone or combat cardiac weakness with suprarenal extract given by the stomach or hypodermically. On the other hand, strong solutions of it should be used for any capillary bleeding surface that can be reached, such as the stomach, large intestine, rectum, bladder, vagina, and perhaps uterus, for mucous membrane congestion, cancer, etc. From the uterus or bladder I should advise its being washed out in a short time on account of the decomposition of the suprarenal extract which soon takes place.

BIBLIOGRAPHY.

1. Schiff: Untersuchungen über die Zuckerbildung in die Leber, etc. Würzburg, 1859.
2. Schiff: Revue médicale de la Suisse romande, 1884.
3. Gley and others: Schäfer's Physiology, p. 940.
4. Halsted: Johns Hopkins Hospital Reports, Vol. i.
5. Ord: Medico-Chirurgical Trans. London, 1878.
6. Reverdin: Rev. Méd. de la Suisse Rom. Genève, 1882, p. 539; 1883, Nos. 4 to 6; and 1887, pp. 275 and 328.
7. Kocher: Arch. f. klin. Chir. Berlin, 1883, Bd. xxix, S. 254.
8. Schäfer: Physiology, Thyroid Gland.
9. Weiss: Chemisches Centralblatt, 1897, B. i, S. 298.
10. Baumann: Münchener med. Wochenschr., 1896, No. 14.
11. Ross: *Ibid.*, 1896, No. 47.
12. Cyon: Centralbl. f. Physiol., Leipzig u. Wien, 1897, S. 357.
13. Oliver and Schäfer: Journ. of Physiol., Cambridge and London, 1895, vol. xviii, p. 277.
14. Smith: Journ. of Physiol., Cambridge and London, 1894, vol. xvi, p. 378.
15. De Coulon: Virchow's Archiv für pathologische Anatomie und Physiologie, vol. xiv, B. vii, S. 53.
16: Greenfield: Brit. Med. Jour., 1893, ii, p. 1261.
17. Bettmann: Berlin. klin. Wochenschr., 1897, S. 518.
18. Leichtenstern und Wendelstadt: Deutsch. med. Wochenschr., 1894, No. 50.
19. Love: JOURNAL A. M. A., April 21, 1900, p. 975.
20. Bruce: Jour. Mental Science, 1895, vol. xli; Edinburgh Hospital Reports, 1895.
21. Starr: Trans. Congress of Am. Phys. and Surg., 1897, p. 150.
22. Putnam: Ibid., 1897, p. 131.
23. Bell: Internat. Med. Magazine, July, 1896, p. 379.
24. Svehla: Centralbl. f. Phys., 1897-8, S. 477.
25. Cunningham: Jour. of Experimental Medicine, 1898, iii, p. 225.
26. Mendel: American Jour. of Physiol., Jan. 1, 1900.
27. Kinnicutt: Trans. of Congress of Am. Phys. and Surg., 1897, p. 160.
28. Howell: Jour. of Experimental Medicine, vol. iii, No. 2, 1898.
29. Schäfer and Vincent: Jour. of Physiol., London, vol. xxv, Sept. 18, 1899.
30. Schäfer: Physiology, p. 945.
31. Brown-Séquard: Compt. rend. Soc. de biol. Paris, 1893, p. 527.
32. Brown-Séquard: Compt. rend. de l'Ac. des Sciences, xliii, 1856, pp. 422-542.
33. Nothnagel: Ztschr. f. klin. Med., Berlin, 1879, B. i, s. 77.
34. F. and S. Marino-Zucco: Riforma med., Roma, 1892, tome i,
35. Schäfer and Oliver: Journal of Physiol., Cambridge and London, 1895, vol. xviii, p. 235.
36. Moore and Purinton: American Jour. of Physiol., vol. iii, March, 1900.
37. Abel: American Jour. of Physiol., vol. ii, March, 1899.
38. Moore and Purinton: American Jour. of Physiol., vol. iii, May, 1900.
39. Boruttau: Arch. für die Gesammte Physiologie, Nov. 1899, and Deutsche Med. Wchschr., Sept. 21, 1899.
40. Rolleston: Brit. Med. Jour., London, 1895, vol. i; also Langlois, "Maladie d'Addison," Dictionnaire de physiologie de Ch. Richet, Paris, 1895.
41. Adami: Trans. Congress of Phys. and Surg., 1897, p. 111.
42. Bates: N. Y. Med. Jour., May 16, 1896.
43. Swain: Ibid., Dec. 24, 1898.

Tetanus Infection Through the Nose.—Experiments have been reported by Thalmann, from the Leipsic Institute of Hygiene, in which it was found impossible to induce tetanus infection through the sound or even the diseased alimentary canal or urinary passages, but that nasal lesions afforded favorable conditions, also catarrh. Tetanus germs or toxins can be inhaled without infection if the air-passages are sound. In idiopathic tetanus in man, therefore, he suggests (*Berliner klin. Woch.*, January 28) that the entering point of the infection should be sought for in the nose.

TREATMENT OF ADDISON'S DISEASE.

WITH CASE.*

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On Nov. 11, 1898, a lad, 19 years of age, came under my care in the out-patient department of the Medico-Chirurgical Hospital of Philadelphia. The history which he gave was rather indefinite and incomplete. He seemed to be an unobservant youth and was probably rather below the average in intelligence, although this slight deficiency may have really been due to the disease with which he was afflicted. He was a mill operative by occupation. His weight at that time was 122 pounds, and he was about 5 feet 5 inches in height. He stated that within no long period he had lost about 5 pounds. The lad belonged to a tuberculous family and his mother had died of pulmonary involvement when he was about one year old. The patient gave a vague account of having had chills about a year previously and at the same time he suffered from pain in the back and limbs. He had not received any injury. About ten days before he presented himself for treatment he had experienced an attack of nausea and vomiting. There was also some cough. Nevertheless, he did not realize that he was seriously ill, thought himself as strong, or nearly as strong, as ever and went to work every day. His pulse was 102 and rather weak, but not extremely so. At this time he complained of lumbar and abdominal pains. He was decidedly nervous. The apex of the heart beat tumultuously against the chest. The face of the patient was of a very pronounced dark reddish-brown, or bronzed, hue. Even the hair was dry and of a similar tint. Discoloration of the skin had existed for a year. It first appeared as dark blotches upon the forehead, whence it spread to the cheeks and other parts of the face. The blotches gradually extended and became confluent, until finally the bronzing was entirely symmetrical. No other portions of the body were thus affected, except the forearms and hands. With the exception of the discoloration there were no other alterations of the surface. The trunk and lower limbs were of a peculiar deep-yellow color. Upon the mucous membrane of the mouth were some small purplish spots. In other respects the mucous membrane was pale and indicative of anemia.

Examination of the sputum and urine threw no light upon the case. The former contained no tubercle bacilli. In the urine were found some pus-cells—leucocytes; numerous crystals of calcium oxalate; some epithelium, probably from the pelvis of the kidney, though possibly from the bladder; a few shreds of mucus; one or two spermatozoa; bacteria, and a few yeast plants.

Diagnosis.—The conspicuous and very peculiar discoloration of this lad's skin furnished a clue to the diagnosis. It was of that distinctive hue which, when once seen, can never be forgotten. The color was that of bronze, that is a deep brown with a tinge of red. It resembled that which may be seen in a machinist's face after a day of toil by the furnace, discolored under the influence of heat, soot and metallic particles. The patient's employment, however, was of a very different kind and did not expose him to such sources of temporary discoloration. The pigmentation, moreover, was indelible and located in the organic substance of the integument.

A disease which produces an excessive deposit of pigment in the rete mucosum is chloasma. This affection of the skin may be due to local or constitutional causes. The latter variety, known as symptomatic chloasma, may depend upon anemia, chronic malaria, tuberculosis, cancer, or chronic disease of some important viscus. Such cases, consequently, present signs and symptoms pointing to impairment of general health and stamping the malady as much more serious than a mere disease of the skin. Symptomatic chloasma is, however, much more common in women than in men. It is associated particularly with altered conditions of the sexual apparatus. It is witnessed in pregnancy and utero-ovarian disease. Our patient was too young to be the victim of carcinoma. It is true that malignant disease attacks the youthful in rare instances, but no form of abdominal growth could be detected and no sharp pain existed. The characteristic hue of cancerous cachexia is a shade of yellow. Chronic malaria likewise imparts a sallow tinge to the skin. Although country people, originally sunburned, acquire a singular hue after having long been sufferers from malaria, yet the surface never assumes that bronzed aspect so noticeable in the patient whose case I describe. Patches of chloasma are generally of an irregular outline; the color may exhibit all shades from light-yellow to nearly black. In fact, the pigmentation may be variously colored on different parts of the same person. Idiopathic chloasma may affect robust individuals and simply present itself as an abnormal distribution of pigment in the Malpighian layer of the skin. Symptomatic chloasma is preceded or accompanied by symptoms denoting serious constitutional impairment.

A bronzed discoloration of the skin is occasionally encountered in exophthalmic goiter, abdominal tuberculosis, diabetes, cirrhosis of the liver and abdominal tumors. These various affections, however, could all be eliminated. There is a condition known as "vagabond's disease," in which the skin assumes a dark-brown shade. The increased deposit of pigment simply occurs in consequence of long-continued irritation by pediculi and scratching of the skin. This discoloration of the surface is not infrequent among tramps.

The prolonged administration of arsenic may produce a diffuse pigmentation varying in hue from brownish-yellow to deep brown. In such instances we should either perceive, or should obtain a history of, other evidences of arsenical intoxication and the patient should have been a victim of some chronic affection, such as malaria or a disease of the skin for which arsenic had been prescribed. This history does not correspond to that of the present case. The indelible stain of the skin and mucous membrane caused by silver when given for too long a period need only be mentioned. The discoloration of argyria is a bluish-gray and bears no likeness to the dusky hue observable at a glance in the subject of this paper. A bluish line due to deposit of silver is also seen upon the gums and mucous membrane of the mouth.

Chloasma generally occurs in patches, although these may extend and coalesce until large tracts are involved. As a rule, however, the discoloration is not as diffuse as in the case of which I speak. After having excluded other sources of discoloration, the diagnosis of Addison's disease was made. I have, indeed, witnessed some cases of chloasma in which the pigmentation was so diffuse that they had been mistaken for Addison's disease by experienced observers. Even in such extreme instances, however, minute inspection will reveal traces of demarcation which originally separated patches of disease from the healthy skin. When the bronzing is decided it is not, in fact, usually difficult to recognize Addison's disease. The task of identification is not so easy, however, when this distinctive discoloration is absent. There are some clinical features which justify us in suspecting the existence of Addison's disease prior to the appearance of the pigmentation. One of these is marked and progressive anemia in the absence of the usual causes of that condition of the blood. The conjunctivæ and other mucous membranes are decidedly pale. There is, furthermore, a debility so extreme as to cause syncope upon the slightest exertion or even when the patient is at rest in bed. The power of resisting fatigue is almost absolutely lost. The tracings of Mosso's ergograph show the curve falling away suddenly, differing altogether in this respect from other wasting diseases, even from pulmonary tuberculosis. From leukemia and pseudoleukemia the early stage of Addison's disease may be distinguished by the absence of enlargement of the spleen and lymphatic glands. Other symptoms suggestive of Addison's disease are palpitation of the heart, dyspnea, loss of appetite, nausea, vomiting, epigastric pain and other evidences of gastrointestinal disturbance.

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Etiology, Pathology and Pathogenesis.—Addison's disease results from lesions which interfere with the functional activity of the suprarenal glands. These ductless bodies doubtless perform a function important to the nutritive processes. When both are removed from frogs the animals perish, although if one is left in place the subject of experiment survives without hypertrophy of the gland which is spared. The removal of one gland from guinea-pigs is often fatal and ablation of both always causes death, according to Brown-Séquard. The adrenals are highly organized structures, abundantly supplied with blood-vessels, lymphatics and nerves. Swale Vincent[1] writes that the adrenals are regarded by the best authorities as double glands, the medullary portion being derived in some way from the sympathetic system and the cortical substance being related to the reproductive system. Both the cortex and medulla are composed of glandular tissue. The organs are supplied by the solar and renal plexuses. In the majority of autopsies of patients who died of Addison's disease fibro-caseous lesions due to tuberculosis have been found in the suprarenal bodies. In other cases the glands have undergone simple atrophy. In a third class there was interstitial inflammation, leading to atrophy. In some instances malignant disease had invaded the capsules; in others they contained extravasated blood. Finally, in a certain number there was no lesion of the suprarenal bodies themselves, but the semilunar ganglion was compressed or inflamed. This disease of the sympathetic may have led to atrophy of the adrenals. M. Raymond, in March, 1892, reported to the Medical Society of the Hospitals, the case of a woman, 27 years of age, who died from Addison's disease. In front of the spinal column was a hard, bosselated ganglionic mass, which extended from the diaphragm to the promontory of the sacrum. The right semilunar ganglion was adherent to the ganglionic mass; on the left side the structures were fused. The right semilunar ganglion was sclerotic; the nerve cells were pigmented and vacuolated; some were atrophic. The spinal cord and suprarenal capsules of both sides were intact. The relationship between the sympathetic system and the suprarenal glands is also shown by the fact that stimulation of the splanchnic nerve stimulates the activity of the glands under consideration. Tumors in this situation, however, do not always give rise to the symptoms of Addison's disease. Vincent concludes that the medullary substance of the suprarenal glands contains an active toxic principle specific to themselves and found in no other tissue. Concerning the physiological function of the adrenals two theories have been advanced. A French school of observers argues that the office of these organs is to destroy the toxic substances which accumulate in the blood as a result of the tissue changes which go on in the body. On the other hand, Oliver and Schaefer, as a consequence of their experiments and studies, believe that these organs elaborate a secretion which is taken up by the blood and is of importance to the nutritive processes of the body. They conceive that the internal secretion has a direct influence upon the muscular tissue, both of the striped and unstriped variety. Professor Howell, of Johns Hopkins University, indeed, accepts the hypothesis fully, and in a paper read before the New York Academy of Medicine, in April of this year, states that it has been demonstrated conclusively that the adrenal vein contains more of the secretion than the other veins of the body. Swale Vincent suggests that the two theories are not so antagonistic as has been usually believed, and that the secretion of the capsules may destroy waste products of muscular metabolism and may also form an active material by means of which an increased muscular tone is produced.

It has been found experimentally that the intravenous injection of suprarenal extract causes a very remarkable constriction of blood-vessels by its direct influence on muscular fiber. This action occurs even when all the nerves leading to a part are cut. Contraction of the caliber of the arterioles causes an enormous rise of blood-pressure. The muscular substance of the heart is also directly stimulated. The decided rise of arterial tension was confirmed by Prof. Isaac Ott, in his valuable experiments relative to the animal extracts, performed in the physiological laboratory of the Medico-Chirurgical College, his subjects being rabbits. Large doses of the extract excite the pneumogastric center, the consequence of which is that while the auricles continue to beat, the contractions of the ventricles are arrested. Other effects of these injections are paresis, paralysis, hematuria, hemoglobinuria, convulsions and low temperature, the paralysis being of central origin. It is thought that the vasoconstrictor action is probably due to the substance lately isolated from the medullary glandular substance by Abel, and termed epinephrin. Whether the central effects are caused by the same principle is as yet unknown. The experimental evidence appears to indicate that a healthy condition of the suprarenal glands is essential to the nutrition of muscular tissue and serves to explain the extraordinary debility characteristic of Addison's disease, in which the functions of those glands are inhibited.

A second point of clinical and pathological interest relates to the source of the coloring matter deposited in the skin and mucous membranes of patients suffering from Addison's disease. Pfoerringer[2] has recently reported a case in which he particularly studied the abnormal pigmentation. Nothnagel, Riehl and von Kahlden had already referred the origin of the pigment to the blood. Pfoerringer found in the capillaries supplying the papillary layer of the derma collections of pigment granules, some of which were free and others were situated in the interior of leucocytes. This author hesitates to draw any conclusions in reference to the manner in which pigment is produced. In this connection MacMunn's experiments and conclusions are interesting and suggestive. This author believes that the function of the adrenals is to select from the blood effete pigments with their accompanying proteids, viz., hemoglobins and the histohematins. This points us to their origin in the iron-bearing and oxygen-bearing erythrocytes, or red corpuscles of the blood. Consequently, disease of the adrenals themselves or, possibly in some cases, suppression of their function by disease of the great abdominal plexuses of the sympathetic, allows these pigments to remain in the blood unaltered, from which they are deposited in the skin and mucous membranes. It assists us also to comprehend the anemia which accompanies the disease.

In view of all such facts and investigations how are we to explain the case reported in 1896 to the French Congress of Medicine, by Dr. A. Rispal, of Toulouse? The patient was a man, 24 years of age, healthy until ten months previous to death, during which period he became afflicted with pigmentation of the skin and mucous membrane, progressive asthenia, and gastro-intestinal difficulties. At the autopsy there was no visceral tuberculous lesion; there was said to be congenital absence of both suprarenal capsules; the branches and ganglia of the abdominal sympathetic nervous system were entirely unaffected. Dr. Rispal stated that he had found a record of two similar cases. Is it possible that in these cases there were accessory glands which had escaped notice at the autopsy?

Treatment.—Until a few years ago the treatment of Addison's disease was most unpromising. We stood in its presence almost utterly devoid of hope. It was formerly the custom to administer iron, arsenic, strychnin and other reconstituent remedies with the view of making a favorable impression on the blood and nervous system, but it seldom exhibited any efficacy. Agents for the relief of vomiting, diarrhea, pain and other symptoms were given according to indication. Now and then a case may have been benefited. A few are said to have recovered. I find the record of a case presented by Dr. Neumann[3] to the Berlin Society of Internal Medicine. The patient was a man, 57 years of age, who had been suddenly atacked, fourteen days before he was brought to the Moabit Hospital, by somnolence and weakness, with bronzing of different parts of the skin and mucous membrane. The patient was treated by means of the continued current and iron. The man gradually, though slowly, improved and it was not until two years from the beginning of the attack that he was able to remain out of bed all day. He then began to recover rapidly and during the following year he was able to resume his occupation. The skin gradually grew paler, the spots disappeared and at the date of the report, six years after his return to work, the color was normal. This fortunate result, however, can only be looked upon as very exceptional. Guided by the analogy between ductless glands and the brilliant effects of organotherapy in myxedema and cretinism, it was proposed that an analogous method should be attempted in the treatment of Addison's disease. The idea was advanced that the use of suprarenal extract might be found to have a beneficial influence in the last-named malady. Accordingly, it was determined to make use of the extract of the adrenals in the case of which I now write.

In view of the marked asthenia, with the tendency to dangerous syncope, which are such prominent features of Addison's disease, this patient should, either at his own home or the hospital, have been confined to his bed. In this respect, however, we could not control our patient. He was a poor, working lad and felt himself obliged to remain at his employment as long as his strength permitted. Moreover, he did not realize the gravity of his condition. To him it seemed rather a matter of curiosity that his skin should be turning so dark. As the most promising means at our command, he was immediately placed upon the suprarenals in the form of an extract. Each tablet contained 5 grains. Of these two were given each day, and the number was gradually increased. Under this treatment he began to improve. On Jan. 6, 1899, he was again brought before the class and it was noted that the nausea, vomiting and cough had disappeared, while the discoloration of the skin semed less decided. On January 20 the report was still favorable. The bronzing was thought to be a shade lighter and the general condition was fairly good. This encouraging progress, apparently in response to the treatment, continued until the beginning of March, 1899, that is, for about three and a half months. During the first five weeks of this period the patient gained 6 pounds in weight and improved a little in strength. There was considerable amendment in the state of his digestive apparatus. Unfortunately, this amelioration was not destined to a long duration. The youth was suddenly attacked by severe pain in the left part of the epigastric region, extending into the left hypochondrium and around into the back. At the same time there was almost incessant vomiting, which was much aggravated when either solid or liquid food was taken. The patient lost flesh rapidly, medicine was without avail and at the end of the third day his sufferings were ended by death.

Post-mortem Examination.—The body was very much emaciated. The areas of discoloration were of a pronounced bronze hue, as has been described in the foregoing history. The right and left pleuræ and the pericardium were normal. The heart was slightly smaller than normal. There was no disease of the valves, but the myocardium was somewhat soft and flabby, showing marked fatty degeneration. The left lung was crepitant, with some hypostatic congestion at the base. The apex showed a few small encapsulated tubercular areas. These did not appear to be active, while in close proximity were evidences of a previous inflammation, possibly also tubercular in character. In the apex of the right lung were several sclerotic areas which had formerly been of the active tubercular type. The liver was fatty and of about normal size. The spleen was unaffected.

The suprarenal glands were only slightly enlarged. On section it was found that they had undergone more or less change throughout; some portions were hard while in others caseous degeneration was quite marked.

The stomach and intestines were normal. The right kidney was slightly enlarged and congested. The left kidney was about two-thirds the normal size; its pelvis was large; the left ureter was much thickened and of double the normal caliber. The opening of the ureter into the bladder was also very large, being at least thrice the natural size. No obstruction was observed in the ureter to account for this peculiar condition. The glands of the mesentery were likewise enlarged and showed caseous degeneration on section.

Remarks.—From the findings of the autopsy it would appear probable that there had originally been a primary tubercular process in the apex of the right lung and that this had healed. The suprarenals were subsequently involved and implication of the left lung followed, although it is possible that the condition in the suprarenals might have been secondary to the disease in the right lung and have remained latent for a time. The lesions of the right lung were certainly old.

This case agreed with the majority in being of tubercular origin and nature. The suprarenal capsules were not enlarged so decidedly as in most instances. The semilunar ganglia were removed for microscopical examination. The small size of the heart was also observed in a case under the care of Dr. F. Buzzard[4] at the Northampton General Infirmary. The patient was a man of 40 years and the suprarenals were extensively destroyed by tubercular disease. The heart was so small that it was rather to be compared to that of a child of 14 than of an adult.

The result of the treatment of Addison's disease by ingestion of glandular extract is by no means so uniform and satisfactory as that of myxedema. The evidence is, indeed, of rather a conflicting character. In some cases improvement has taken place; in other instances the method has failed. In a series of cases treated in this manner Oliver reported 6 cured and 22 improved. Professor Osler[5] has described the case of a man who had exhibited symptoms of Addison's disease for two years and whose sputum contained tubercle bacilli. Notable improvement occurred from the use of suprarenal extract. At the end of five months he had gained 19 pounds, was active and vigorous. The pigmentation, however, was unaffected. Three months later he remained well and was free from cough. I am not informed as regards the subsequent history.

Dr. L. W. Schwab[6] observed the extremely rare occurrence of two cases in the same family, which was free from tubercular tendency. The patients were brothers and resembled each other closely in habits and temperament. One of these was treated by extract of the gland for two weeks, but the agent had to be suspended on account of other symptoms. In a case described by Dr. C. W. Suckling[7] the same plan of treatment was followed by a very satisfactory improvement. The patient was a man, 40 years of age, who for three months had frequently fainted, and for seventeen nights consecutively had even fainted while in bed. The man suffered from nausea, great prostration, pigmentation and leucoderma. He was given tabloids containing 5 grains each of suprarenal gland substance, beginning with two and gradually increasing as long as they caused no ill effects. After taking them for a month the patient was no better and still fainted. The quantity was again raised until he was taking 35 capsules daily when he complained that they caused pain in the back and made his tongue sore. He had, however, gained strength. The remedy was continued, but in smaller doses. At the end of the eighth month of treatment he reportd that he had not fainted for six months. Thirteen months after he first came under observation the man was perfectly well. The pigmentation and bleaching were almost gone. The pulse was normal and he could do a heavy day's work.

No conclusion could be drawn from the interesting case published by Dr. Gilbert Tyson Smith,[8] as the patient was already in a desperate condition when first seen. A woman, 46 years of age, but looking much older, had been ill for two weeks prior to coming under Dr. Smith's observation. Pigmentation was not present until the sixth day of attendance and she died on the eighth. The woman was doomed and nothing could have saved her life. The case was remarkable by reason of its rapid course. At a meeting of the Medical Society of the Hospitals, M. Béclere[9] exhibited a patient, 28 years of age, who, in addition to pulmonary tuberculosis, had for three years presented signs of Addison's disease. The patient had been treated by means of suprarenal glands by the mouth and subcutaneous injections of a glycerin extract of the glands. The woman was benefited and at the end of three years the discoloration had almost entirely disappeared. The general condition was very good. At the same meeting M. Widal spoke of a case in which decided, though temporary, amelioration resulted from the same mode of treatment. The patient gained strength but the pigmentation was unaltered. M. Haymen also referred to a case in which there was temporary improvement without any change of color. Grainger Stewart encountered a case in which suprarenal extract was ineffectual. Dr. Middletown, of Glasgow, writes of one case in which there was some diminution of pigmentation from the use of the extract of the gland.

My own patient, whose case forms the foundation for this communication, was rather younger than the average sufferer from Addison's disease. This malady occurs most frequently in men and generally between the 20th and 40th year of life. Addison's youngest patient was 24 years of age. The affection is rare, but not altogether unknown among children. In an inaugural thesis on this disease among children Dr. H. Dezirot states that one case has been observed in a babe of seven days, and one in a child of 3 years. Osler mentions one in which the disease was congenital and the child lived eight weeks; the adrenals were large and cystic. The disease does not commonly develop among children until about the age of puberty. As among adults, most juvenile patients are male. The affection generally begins with ambiguous and insidious symptoms, but without pigmentation. Darier witnessed pigmentation as the first symptom in a child of 10. Addison's disease sometimes begins in young subjects with convulsions, chorea, chlorosis and heart trouble, and is often preceded by tuberculosis of the lungs, kidneys, glands or joints. Pigmentation usually occurs at the end of several months. In six of Darier's cases among children ingestion of suprarenal glands produced temporary improvement in two, but both patients eventually died of the disease. In three cases there seemed to be slight amelioration. The results of organotherapy would, therefore, appear to be as doubtful among children as in adults. Dr. Bury[10] has described a case of Addison's disease which had existed for a year in a child of 13. The surface was deeply and universally discolored. This patient was given a glycerin extract of the gland, but with no effect, as she died nine days after coming under Dr. Bury's care.

In contrast to the marked bronzing which occurred in my patient there was but slight discoloration of the mucous membrane. It is noteworthy that other anomalies of pigmentation sometimes accompany the distinctive discoloration. Thus, in Dr. Buzzard's case, "in contrast to the general darkening of the skin there were patches of pure white. . . The margins of the various patches were even more deeply pigmented than the surrounding skin, the appearance suggesting that the pigment had been carried out and heaped up peripherally." Dr. Suckling's patient exhibited both pigmentation and leucoderma. Moles sometimes occur. Renner draws attention to numerous wart-like eminences which he has perceived scattered over the surface. He also states that some cases are attended by atrocious itching. In a contribution to the study of Addison's disease, Dr. Rafaele Caporali[11] mentions, among other points of special interest, in a case under his care, the variable intensity of the bronzing according to the patient's general condition, the pigmentation of the finger nails, and that the regions usually bronzed were but little affected. Dr.

Tyson Smith's case was notable for the abruptness and rapidity with which the "bronzing broke out"—an eruption, indeed,

Though there was pain in the back there was no history of a blow or other injury in the case which I now report.

Addison's disease is not infrequently preceded by a traumatism of the back or abdomen. This may perhaps act as an etiological factor, for the experiments of Schueller have demonstrated that tuberculous disease will locate itself on a site, the vitality of which has been depressed by an injury.

In concluding this study, although I would advise that in all cases of Addison's disease it is proper to make trial of this suprarenal extract, yet as most cases depend upon tuberculosis of the adrenals we can scarcely expect that the extract can cure cases in which the tuberculous process is advanced or active. In earlier stages it may be beneficial by supplying necessary elements to the blood. It has undoubtedly in certain cases achieved very excellent results. The cases in which organotherapy are useful are probably those in which there is a certain amount of atrophy, sclerosis or inflammatory alterations, but in which a portion of the gland or glands are still functionally potent and in which the ingested extract may come to the assistance of disabled but not totally destroyed organs.

BIBLIOGRAPHY.

1. Birmingham Medical Review, xliii, 1898.
2. Centralblatt für allgemeine Pathologie, Jan. 2, 1900.
3. Medical Bulletin, 1894, p. 54.
4. The Lancet, Feb. 17, 1900.
5. Medical Bulletin, March, 1896.
6. Journal A. M. A., 1898, i, p. 708.
7. Lancet, 1898, i, p. 1388.
8. Maryland Medical Journal, 1898, xxxix, p. 645.
9. Medical Bulletin, 1898, xx, p. 178.
10. Lancet, 1897, i, p. 1678.
11. La Riforma Medica, 1898, xiv, p. 864.

DISCUSSION ON PAPERS OF DRS. OSBORNE AND SHOEMAKER.

Dr. A. Bernheim, Philadelphia, mentioned a case he had had under treatment since last February—one of an acute vasomotor ataxia in which he had used suprarenal extract up to 60 grains a day with very good temporary results. The heart sometimes got up to 130, 140, 150, and one time to 160 in one minute, but while taking the extract it came down to below 100, and the tremor subsided, though there was excessive perspiration. He was a young man, 24 years of age, who had to change his shirt twenty to thirty times in the twenty-four hours. He weighed the shirt one day, and found that the difference between the dry and the wet shirts was up to 260 grams respectively. In connection with other treatment the patient has entirely recovered.

Dr. J. C. Melville, Grand Rapids, Mich., said that in his section of the country there are few cases of exophthalmic goiter and but few of cretinism. In a case of cretinism treated by thyroid extract, he observed the most marvelous effect from any therapeutic agent that he has ever seen; there was loss of weight, with clearing of the mental faculties, and return of ordinary intelligence; the progress was gradual but decided and uniform. In exophthalmic goiter, he has used the suprarenal extract with good results, in only one case. In a case of profuse menstruation, with very rapid pulse, the disease had existed for about a year, and many other lines of treatment had been followed without benefit. In regard to dosage, he said that he used 5-gr. doses of the suprarenal extract several times a day, for twenty-one days.

Dr. E. W. Mitchell, Cincinnati, Ohio, said that he had had experience in the treatment of two cases of exophthalmic goiter in which he used the thymus extract with apparently good results. One of these cases was that of a seamstress in whom the exophthalmus was marked. Having tried other remedies without any result, he put her on thymus extract with almost immediate improvement. The tumor, which had been very large, became smaller, the appetite improved, but the tremor was not improved and the pulse-rate was not much changed. He then put her on 25 to 30 grains of hydrobromate of quinin daily, and she made a very good recovery; the exophthalmus, however, is still considerable, but is subsiding under the administration of galvanism. In another woman, in whom quinin was inadmissible on account of ear trouble, marked improvement followed administration of thymus extract.

QUANTITATIVE TESTS FOR PROTEOLYSIS.*

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It is a remarkable fact that, after ten years' scientific —or, at least, experimental—study of the stomach, none of the methods of chemical examination of gastric contents in common use deals directly with the prime function of this organ. We draw inferences from the rapidity with which the stomach passes its contents into the intestine, often relying on fallacious tests, such as that with salol. We measure as carefully as possible the hydrochloric acid that is present in excess of that functionally active, and assure ourselves that more ferment has been secreted than has been utilized. We note how much or how little the gastric secretion has interfered with the digestion of starches by ptyalin We quantitate and qualitate abnormal accompaniments of digestion. In short, we tax our ingenuity to investigate all the circumstances and accessories of gastric digestion and ignore the direct question as to how well or how poorly the stomach has discharged its prime function of converting albumins into peptone.

The text-book methods of distinguishing one form of proteid from another are not adapted to clinical use. So far as the proteids which may be differentiated in the course of gastric digestion are concerned, no authority—so far as the writer has been able to learn—has attempted a quantitative analysis in the strict sense of the term, although many works on organic chemistry describe the reactions of acid albumin or syntonin, and the subsequent forms which proteid matter assumes during peptic digestion. In these manipulations, however, it is assumed that a comparative abundance of raw material is at hand, a condition which does not exist for the analyst of stomach contents and, explicitly or implicitly, the aim of such manipulations is merely the preparation of a bulk of more or less pure organic substances. The analytic chemist or the clinician, on the other hand, rarely desires a commercial product; he does not insist that analysis shall literally break up a mixed mass into its components, but only that the kind and proportions of these components shall be indicated. It is interesting to note how completely this practical object has been ignored by various writers who have considered the chemistry of gastric digestion, and how utterly lacking are the warnings that would have been indelibly stamped on the memory of any one who had attempted to estimate the proteids of digestion, with the object of obtaining clinical information.

Dr. Arthur Gamgee, in his most interesting and valuable work on "Physiological Chemistry," devotes pages 114-144 of Book II to the consideration of the nature, constitution and reactions of the products of digestion of proteids. In this discussion, he quotes from a considerable number of authorities, yet not a single quantitative statement as to proteid digestion is made, except as to the total dissolving power of pepsin under artificial circumstances. Pages 178-187 (including other pages by reference) are devoted to "Laboratory Work Connected with Gastric Digestion," and nine distinct methods of research are described in detail, but there is not a hint that any one might wish to know what the stomach had actually accomplished in the digestion of proteids.

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Ewald's "Diseases of the Stomach, first American edition, 1892, contains an elaborate table of reagents precipitating syntonin, albumose and peptone, but no warning is given of the quantitative difference in "propeptone" (albumoses) according as various reagents are used, nor to the obstacles to the use of mercuric salts and tannic acid, as will be explained later. On page 44, the absence of "propeptone" during the digestion of meat is noted and, on page 45, the subject is brought to a climax as follows: "According to our present knowledge, it is of considerable value to determine and estimate quantitatively, not alone the final but also the intermediate products at any given stage of digestion of albumin." Here the subject is dropped, except for an allusion to the possibility of drawing deductions from various qualitative tests. Nowhere in the clinical chapters is rêference made to this matter, in spite of its "considerable value." The writer confesses that for some years he conscientiously tried to estimate by the bulk of albumin precipitated by boiling, by the ring of albumose above nitric acid and by the amount of peptone and albumose precipitated by a final reagent, how well or how poorly the stomach was performing its function and that he occasionally referred with judicious vagueness to the importance of thus estimating proteid digestion. This period of self-deception passed and the method described in the present paper is due to an effort to obtain, at least, results that are objectively correct though not necessarily so important as to solve all the mysteries of the physiology of the stomach. In the second American translation of Ewald's work, prepared by Manges in 1896, Boas' statement as to the absence of propeptone in the digestion of meat is modified to apply to "that portion of propeptone which is precipitated by rock salt and acetic acid." The importance of noting the amounts of the various products of proteolysis is less emphasized, probably because the impossibility of drawing deductions from qualitative tests had become apparent. In accord with most modern authorities, this second edition mentions ammonium sulphate as the most complete precipitant of albumoses (propeptone) and the opinion is also expressed that very little genuine peptone is formed during gastric digestion. Hemmeter and other authors who have written on the stomach practically ignore the possibilities of quantitative analysis of the proteids of gastric digestion and the few allusions to the subject that may be found in medical periodicals are lacking even in the claim of practical experience in this direction.

Before proceeding to a description of an approximately accurate clinical method of estimating the amounts of proteid present in the stomach contents, in the three easily recognizable stages of digestion, a brief review of the physiologic function of the stomach may not be out of place. Gastric digestion is largely mechanical and, in this respect, deals with all kinds of foods, without reference to chemic classification, but according to their histologic structure, cohesion, solubility, etc., to the end that the entire mass of food may be reduced to a fairly homogeneous pulp. In regard to secretion, the stomach is passive as regards fats, to some degree inhibitive of carbohydrate digestion, active only for proteids and certain closely allied nitrogenous substances, such as hemoglobin, collogen, etc. While fats are essentially foreign bodies in the stomach, starch digestion may, under certain circumstances, be even more complete than proteolysis, though the small reliance placed on either salivary or peptic digestion is evidenced by the fact that the pancreas normally completes the unfinished part of both starch and proteid digestion. According as the meal is small, easily digested and liquid, rather than hearty, mixed and solid, gastric digestion becomes important as compared with pancreatic. Thus, after a meal consisting of a cracker and a cupful of beef-juice, probably nine-tenths of the proteid is peptonized in the stomach; after an ordinary dinner, probably nine-tenths of the work falls to the pancreas. Salivary digestion may be very important if mastication is deliberate and if food is not taken too hot. Under ordinary circumstances it is of very little practical importance. As the stomach empties into the intestine little by little, the first chyme to pass the pylorus is relatively undigested, then the successive outputs become more and more thoroughly freed from proteid by digestion, until, finally, the pylorus relaxes to allow the passage of the practically indigestible residue. This last may be decomposed by bacteria; cellulose giving rise to methane, and tough fibrous animal tissue to ammonia, hydrogen sulphid, etc. Most of the proteid taken by civilized man is coagulated by previous cooking. The only considerable exception arises from eggs—mayonnaise, egg-nog, etc.—and the albumin and caseinogen of milk. For the last, a special ferment exists, secreted both by the stomach and the pancreas, though what functional activity is left for the pancreatic rennet after milk has passed through the stomach, is not apparent. Reasoning on general grounds, one might suppose that the function of rennet was to insure the coagulation of all albumin ingested in the raw state, but simple experiment suffices to disprove this tempting theory. It is questionable just how far raw albumin follows the typical course of proteolysis. Dr. L. Duncan Bulkley's hypothesis that raw milk may be absorbed undigested is not proved, while it has been proved that this is not the usual occurrence. Raw egg-albumin, however, if administered in large amounts, is eliminated as such in the urine, indicating that at least some of it has been absorbed without digestion. Such facts as this—and saccharosuria is an analogous phenomenon on the carbohydrate side—must be borne in mind as qualifications of the general conception that the function of all digestion is to render insoluble substances soluble, so that they may be absorbed.

Peptic digestion requires an acid medium, free acid acting more energetically than acid salts, mineral acid better than organic, hydrochloric acid best of all. This fact should be considered therapeutically as well as physiologically. Under the joint action of pepsin and hydrochloric acid, the changes occurring in coagulated albumin may be divided clinically into three stages: 1, the production of soluble acid albumin or syntonin; 2, the formation of albumoses or propeptone; 3, the formation of pèptone. The exact transformations during proteolysis are so differently stated by different chemists—or by the same chemist in different editions—that no attempt will be made to bring them into harmony with the three demonstrable stages, nor can the moiety theory be applied clinically with our present knowledge.

The method of proteolysis here proposed, depends upon the separation of proteids into the three groups mentioned and on the estimation of the bulk of moist precipitate by the centrifuge. The method is comparatively inexpensive, easy and expeditious and it seems to be sufficiently accurate for clinical purposes. It must not be forgotten that a moist precipitate is very different from an anhydrous product. For example, the most compact moist precipitate of albumin which the writer could obtain by prolonged centrifugalization, contained 75 per cent. of evaporable water. As chemicals are necessary for precipitating albumose and peptone, foreign substances are introduced and, as will be shown later, the bulk of precipitate varies enormously according to the reagent used. Thus, the same technique must be used in successive experiments to allow comparison and, as in most other clinical methods of quantitation, a certain degree of empiricism is unavoidable.

The stomach contents, obtained in the usual way, are cooled under the faucet to prevent further digestion. The most tedious part of all investigations on stomach contents is the primary filtration. After trying various funnels, filter papers, cotton plugs and a small porcelain colander, it was found that there were, for practical purposes, only two alternatives: Either there must be a delay of an hour or several hours while filtration in the ordinary manner was going on, or the chyme could be prepared for rapid filtration by centrifugalization. After twenty to forty turns of the crank the chyme would be reduced to three layers. The uppermost, consisting mainly of esophageal mucus and butter, is removed with a swab of cotton. The middle layer is comparatively clear and readily passes through an ordinary filter. The lowest layer consists of the usual gastric detritus, starch cells, bits of muscle, other food remnants, bacteria, cellular elements, etc. Except as a matter of preliminary study, it is not worth while to investigate the sediment. If a search is to be made for organic proof of cancer, gastritis, ulcer, etc., the sediment from the jejune stomach must be used.

With a few exceptions made necessary by the small amount of stomach contents, all investigations by centrifuge were made on an original volume of ten cubic centimeters of clear filtrate. As will be seen by consulting the various tables, there can usually be obtained enough stomach contents at the height of digestion so that 10 c.c. may be used for the estimation of HCl, 10 c.c. for estimating total acidity (both these amounts are of unfiltered chyme), while there will remain just about enough to afford 10 c.c. of clear filtrate and a few cubic centimeters more for qualitative examination for sugar, lactic acid, starch, etc. The chromometric tests for combined HCl and other kinds of acidity are not very reliable. Gastric contents being almost always acid —always in the cases investigated in this connection—it was necessary only to boil in order to precipitate the syntonin. Control experiments with acetic acid showed that there was no appreciable amount of mucin present to swell the result, provided the process of centrifugalization and filtration was carried out as described. In slow filtration, without previous centrifugalization, a small amount of mucin might filter through, but it would not interfere materially with the tests for proteids. Boiling was done in an ordinary test-tube, on account of the thickness of the centrifuge tube. After cooling, shaking and pouring back into the latter, the albumin was separated by revolving 4000 times—corresponding to 200 turns of the crank of the Bausch & Lomb instrument—as rapidly as possible. Further revolving produced no diminution in the volume of the precipitate. As a matter of safety, the centrifuge was placed on a shelf so that the revolving parts were above the head of the operator. The liquid above the precipitate of impacted proteid could be decanted perfectly clear, filtration being unnecessary.

Ammonium sulphate, 1 gram to the 10 c.c., was added to the decantate from the precipitate of albumin, in order to produce saturation and carry down albumoses. To expedite solution, heat was employed and when the last crystal was dissolved, the tube was cooled by immersion in water. Albumose remains in solution so long as the ammonium sulphate solution is warm, but forms a turbidity when the temperature is reduced. While 4000 revolutions suffice to throw down all syntonin, 8000 were necessary in dealing with albumose. In fact, it was never possible, even by prolonged centrifugalization, to produce an absolutely clear supernatant liquid. However, all but the merest trace of albumose could be precipitated by 8000 revolutions. Nitric acid was used as a control test for albumose, after first removing albumin by boiling and filtering. Even when the white ring of the qualitative test was sharp, no appreciable precipitate could be obtained by centrifugalizing the mixture of chyme and nitric acid, the precipitate appearing to dissolve rapidly in an excess of acid. It is well known that the ring of albumin and albumose produced in Heller's test, dissolves gradually. Other reagents for albumose were not employed in this series of investigations, as none of them precipitates so completely the intermediate products of digestion before true peptone is reached, as does ammonium sulphate.

For peptone, a number of reagents have been proposed and, as usual in successive analysis, they also precipitate albumose and syntonin if the latter have not been previously removed. Tannic acid, the writer found to be objectionable while making some qualitative tests, several years ago. A solution rapidly changes to gallic acid, whose therapeutic value, it will be remembered, is due to its failure to produce precipitates with proteids. The preparation of a fresh solution is somewhat tedious and an attempt to save time by adding the powder to the chyme will only result in further delay. Most important of all, tannin precipitates starch, so that it is unavailable in many cases in which the stomach contents are being examined. While tannin does not precipitate erythrodextrin, small amounts of starch may be concealed by the latter so that it is not safe to use tannin as a reagent for peptone unless the iodin test applied to filtered chyme is free from blue, violet or red coloration. Mercuric chlorid and iodid were found to be extremely unsatisfactory as reagents, dissolving with difficulty and producing insignificant precipitates. On account of the tendency of mercuric salts to form compounds or to become reduced in the presence of all sorts of substances, organic and inorganic, one could not be sure that the small precipitate obtainable was really peptone or a peptonate, unmixed with other substances. Tanret's solution of mercuric iodid is stable and convenient, but of doubtful reliability for the purpose under discussion. On the whole, phosphomolybdic acid has proved the most satisfactory precipitant of peptone that the writer has employed, producing a very bulky precipitate, usually between a tenth and a fifth of the total contents of the tube. To avoid adding too much reagent, it is best to begin with about .5 c.c.—Merck's guaranteed solution was employed—and revolve 500 times. On adding another drop, it can be seen whether further precipitation occurs or whether there is already present sufficient of the reagent. Four thousand revolutions suffice to form a firm precipitate, not diminished by further centrifugalization, though it is probable that a more powerful instrument would have reduced the bulk still further.

In some instances, the decantate, after throwing down albumose, was divided into two equal parts, one being tested with phosphomolybdic acid, the other with Tanret's solution or tannin. No concordance could be established between the result by phosphomolybdic acid and that by Tanret's reagent. The precipitate of all forms of proteid by tannin was never equal in bulk to that of peptone alone, by phosphomolybdic acid. This fact aroused the suspicion that the precipitate by the latter might include something else than peptone, for instance the result of a reaction with ammonium sulphate or with some of the numerous inorganic or organic substances contained in chyme. Control tests, however, showed that no precipitate occurred with ammonium sulphate nor with substances present in the stomach contents after precipitation of all proteids by tannin. With normal urine, which contains most of the inorganic radicles and examples of the extractives that might be present in stomach contents, only a blue color was produced, never a precipitate. In several cases of albumosuria—formerly called peptonuria—phosphomolybdic acid precipitated nothing after the albumoses had been removed with ammonium sulphate, though, as was to be expected, heat and nitric acid still left proteids precipitable with phosphomolybdic acid. Entirely aside from these crude experiments, there is good chemic authority that the only substances liable to cause a confusion in using phosphomolybdic acid as a test for peptone in chyme, are alkaloids. It is impossible that alkaloids could be present in the stomach in sufficient quantity during life to interfere with the test for peptone.

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(To be continued.)

Experimental Spinal Cocainization.—The *Cbl. f. Chir.* of February 9, mentions the experimental work of a Russian confrère Golebski, who experimented on forty-six dogs and numbers of frogs, inducing analgesia by spinal cocainization. The results coincide in the main with those observed on man. Frogs first lost their sensibility to the effect of acids on the skin, and retained longest the sensation of simple contact. Electric excitability survived sensibility to pain in dogs. Ataxia of the hind legs always accompanied the analgesia. The temperature rose with large doses of cocain, but this could be prevented by injecting antipyrin with the cocain. He was able to ward off strychnin, picrotoxin and aconitin convulsions by means of this spinal cocainization, and even succeeded in making a stomach fistula on dogs that were not fastened in any way. The *Sem. Méd.* of February 20 states that Carini's experiments on dogs injected with as much as 20 cg. to 1 gm. of cocain, demonstrated changes in the nerve cells afterward, similar to those observed in the spinal cord after temporary compression of the abdominal aorta. These changes are merely brief, transient processes of reaction on the part of the cells, with complete restitution.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.*

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(Concluded from p. 738.)

3. URETERO-TRIGONO-INTESTINAL ANASTOMOSIS.

Of the twenty-one dogs operated on, twelve died from peritonitis due to sloughing of the bladder-flap. Four died of peritonitis from other causes, and there were five operative recoveries.

This series of experiments was undertaken for the purpose of studying the changes resulting from the union of the intact vesical ureteral orifices with the intestinal tract. A supplementary object was to simplify Maydl's operation, which seemed unnecessarily complicated. In this series also the operative results were bad, but an entirely new field was being approached, and one slip in technique was responsible for the loss of twelve dogs. I have been unable to find in literature a record of a single dog saved after transplantation into the bowel of the trigonum with its ureteral orifices. Kalabin attempted the operation on five dogs, and Matas two, but they all died of peritonitis. In the first experiments care was taken to preserve the ureteral arteries, which could be seen running close to the ureter and approaching the bladder-wall close to the ureteral orifices. It was assumed that the trigonum, as well as the ureters, was supplied by these arteries. Accordingly, in the first twelve experiments the vesical arteries were tied before cutting out a rectangular flap containing the ureteral orifices. This was done in order to control hemorrhage, which was quite profuse when the bladder was cut across without previous ligation of the artery.

The dogs lived for a number of days, finally succumbing to peritonitis with sloughing of the transplanted flap. The specimen from the twelfth dog was subjected to microscopic examination and the flap demonstrated to be necrotic, although macroscopically it appeared in good condition, and there was no leakage of urine into the abdominal cavity.

The blood supply of the trigonum in the dog was then studied by plaster injections and dissection. It was found that the main blood supply to the trigonum was from the vesical arteries, each of which is given off from the internal iliac artery. These arteries anastomosed with the ureteral arteries, but not freely. This explained why, in the previous experiments, the color of the flap was markedly changed only in those dogs that lived quite a number of days. There was some blood going to the flap from the ureteral arteries, but not enough to nourish it. In the next nine experiments the vesical arteries were preserved, with five recoveries from the operation. Two of these dogs died respectively in eight and twelve days, from abscesses in the abdominal wound, but they proved to be just as valuable for studying the changes following the rectal implantation of the trigonum.

The four deaths were from peritonitis resulting from attempts to unite the vesical flap to the bowel by a simple continuous suture. The result was leakage, peritonitis and death. The operation is difficult to perform on the dog, because of the absence of a sigmoid flexure and the ficulty encountered in pulling down the gut to meet flap. The flap cannot be drawn up beyond a certain nt on account of the necessity of preserving the vesical arteries which are given off from the internal iliac low down.

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* Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

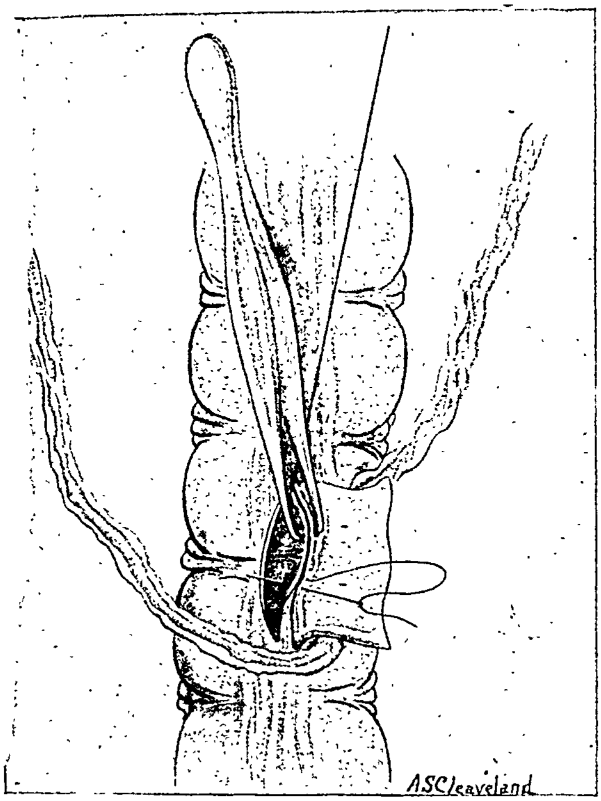

Fig. 16.—Showing incision through intestinal serosa and mus-.laris. Long margin of vesical flap united to one side of bowel .cision by right-angled through-and-through continuous suture.

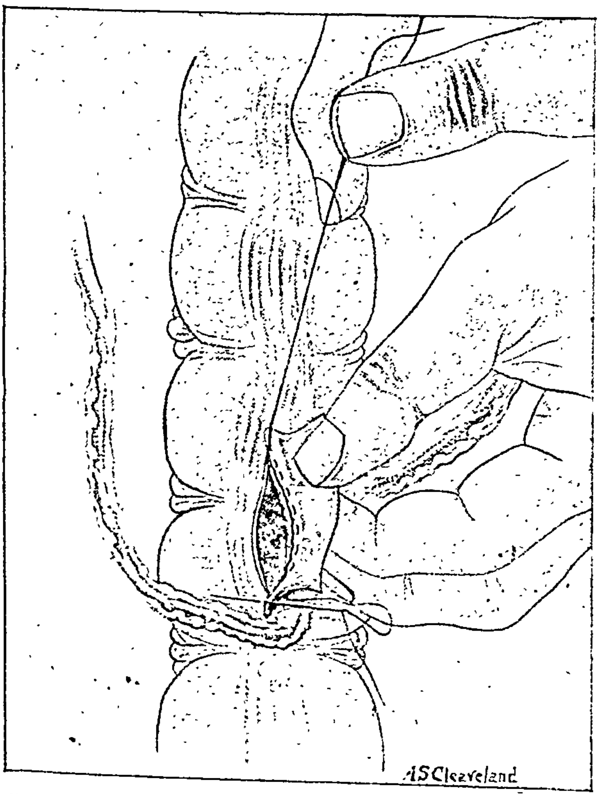

Fig. 17.—Showing method of turning angle and the inversion of the peritoneal surface of flap.

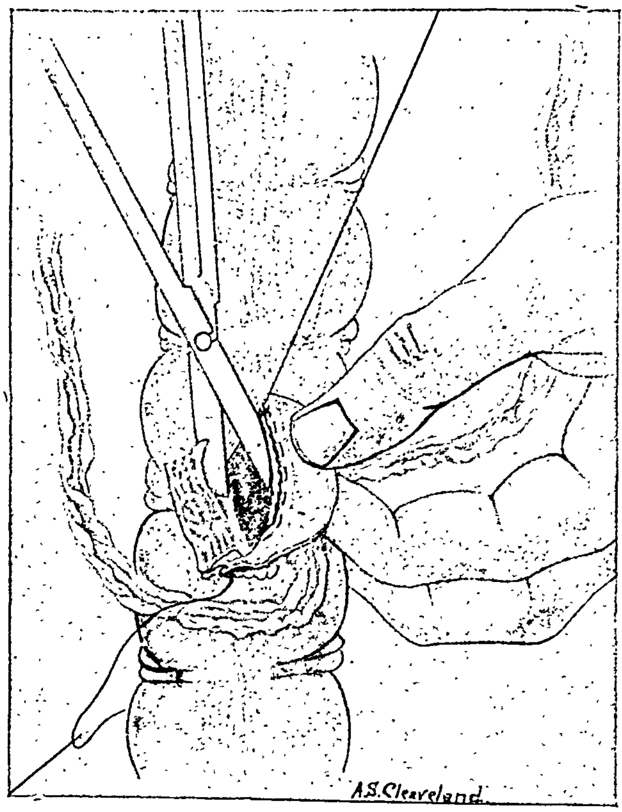

Fig. 18.—Showing the removal of the mucosa by the scissors Up to this time the bowel has remained closed.

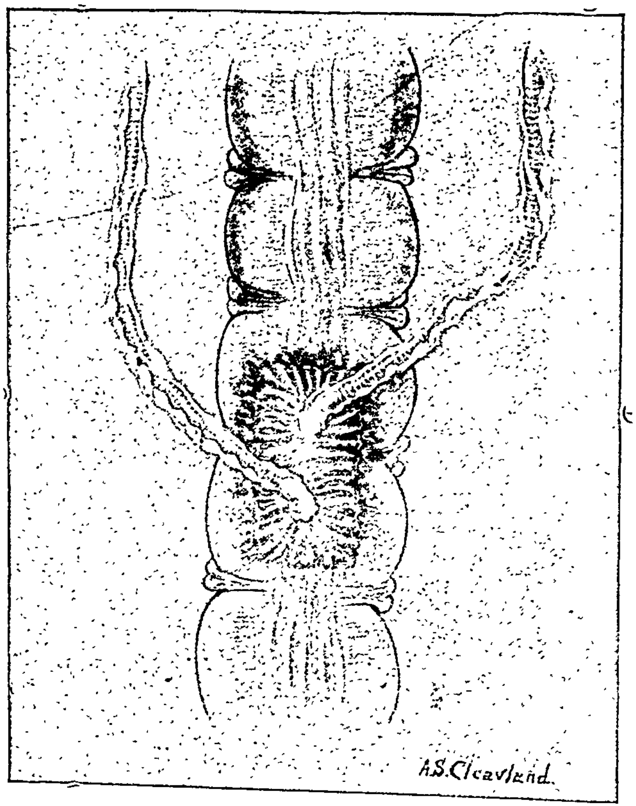

Fig. 19.—Suture of flap completed. Peritoneal edges still further rolled in by a series of Lembert sutures.

Operative Technique Finally Adopted. After opening the abdomen the bladder is brought into the incision and the urine evacuated by careful pressure. The urethra is ligated low down; in the male as near the prostate as possible, by passing the ligature inside the vesical arteries. The urethra is clamped just above the ligature and severed. The abdomen is protected by sponges and the clamp removed, the residual urine being expressed in a sponge. The urethra and bladder are now split with the scissors between the vesical arteries to the fundus of the bladder. A rectangular flap is now formed by cutting the bladder across, care being taken to leave a half-inch border around the ureteral orifices. (Fig. 15.) The ureters are not loosened from their peritoneal coats, as shown in the illustration. In fact, they are hardly to be seen, and are only avoided in the subsequent stitching by placing bougies in the ureteral orifices. A fold of the descending colon is now seized and drawn down and incised longitudinally at such a point as will be most convenient for meeting the bladder-flap. The incision should be just a trifle less in length than that of the flap, and should be made down to the mucosa. The flap should now be placed against one side of the incision with serosa against serosa and the two borders united with a through-and-through right-angled stitch. (Fig. 16.) This stitch includes on the bowel side only serosa and muscularis, but all the layers on the flap side. When the lower end of the incision is reached the same stitch is employed, only, to save time, a single bite is made on the bowel side. The mucosa is pushed toward the center of the vesical flap, so that part muscularis and part serosa are brought in contact with the bowel serosa. A perfect inversion of the edge is accomplished by means of the suture. (Fig. 17.) When one-third of the distance has been closed on the opposite side from which the stitch was started, as much of the bowel mucosa is removed by the scissors as may be deemed necessary to allow the ureteral orifices to fall within the incision. (Fig. 18.) After the low ends of the suture have been tied, another continuous suture, or a series of Lembert's sutures is applied in order to guard against any possible leakage. (Fig. 19.)

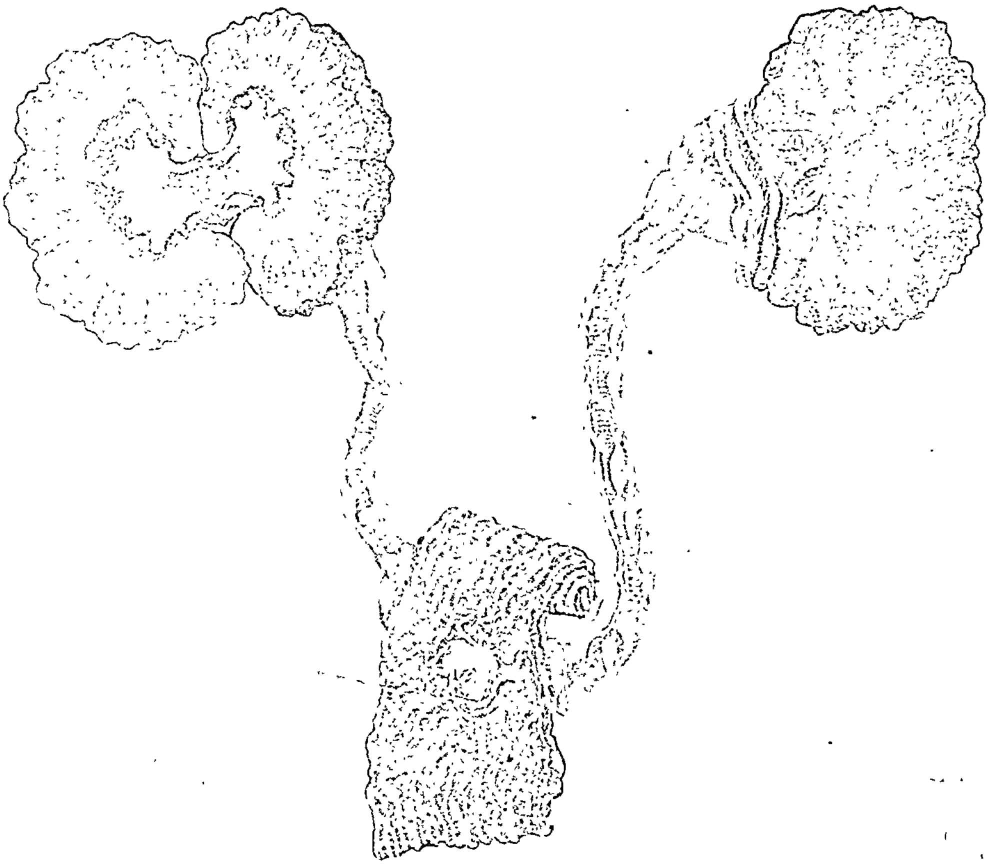

Fig. 20.—Kidneys, ureters and section of rectum of a dog killed thirteen months after bilateral rectal anastomosis.

Experiment 67. Dog IX. (Dog XI. Pathological Reports.) Large yellow male. Operated on January 18, 1900. One-half the trigonum, with left ureteral orifice, was anastomosed with bowel according to method described above, except the bowel mucosa was simply incised, and no portion removed. The bladder was sewed up with two rows of silk sutures. The dog made an uninterrupted recovery, and was killed March 24, 1900, sixty-five days after the operation.

Pathologist's Report. Atrophied kidney, due to occluded ureter. Capsule adherent, thickened, and opaque; kidney anemic, grayish-brown surface, slightly nodular. Left ureter twice the size the right and non-patent.

Bacteriology. Smears from liver, kidney, spleen, and heart negative.

In this case the incised mucosa had united, and after occluding the ureteral orifice had produced an atrophic kidney. This fault in technique was remedied after this case.

Experiment 66. Dog X. (Dog VI., Pathological Reports.) Small, yellow dog. Operation January 18, 1900. Right ureterrectal anastomosis by old method. Left trigonum with its ureteral orifice anastomosed with rectum. Died from sloughing of abdominal wound, giving rise to general peritonitis thirteen days after the operation.

Pathologist's Report. Left kidney: Capsule adherent; cortex and medullary portion equally thick; pelvis smooth. Right kidney: Opaque; capsule adherent; cortex shows hyperemia and yellow millet-seed sized areas—former surrounding latter. Swollen and congested cortex and purulent rays from pelvis to cortex; pelvis dilated; papillæ necrotic, pyelonephritis.

Bacteriology. Left kidney negative; right kidney contains colon bacilli.

Histopathology. Left kidney fairly normal, shows only some hyperemia, and slight cloudy swelling of lining epithelium of convoluted tubules; no bacilli found. Right kidney shows acute suppurative interstitial nephritis, with colon bacilli present.

Experiment 68. Dog XI. (Dog XII., Pathological Reports.) Small, yellow dog. Operation January 24, 1900; killed March 24, 1900. Same technique as above, except mucosa was denuded slightly about edge of the flap; good recovery.

Pathologist's Report. Very ill with mange when killed, two months after operation. Right and left kidney capsules non-adherent; normal; no pyelonephritis. Ureters normal; spleen large and soft; liver fatty. Fibrinous thrombi in left ventricle.

Bacteriology. All smears and cultures from the above organs were negative.

Histopathology. Kidneys show slight parenchymatous changes, due probably to mange. Thrombus in left heart; infected spleen and fatty liver. No pyelonephritis nor the sequelæ of a possible preceding pyelonephritis were found.

PLATE I.

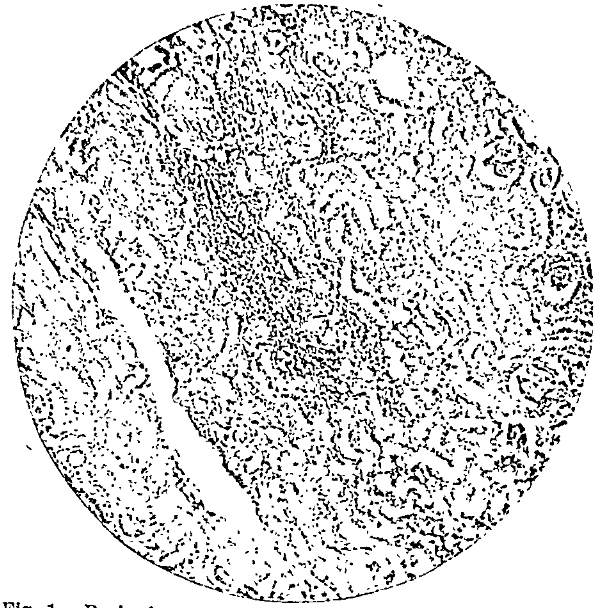

Fig. 1.—Beginning ascending infection after implantation of ureters in rectum. Leucocytic interstitial infiltration, surrounded by convoluted tubules, with beginning cloudy swelling.

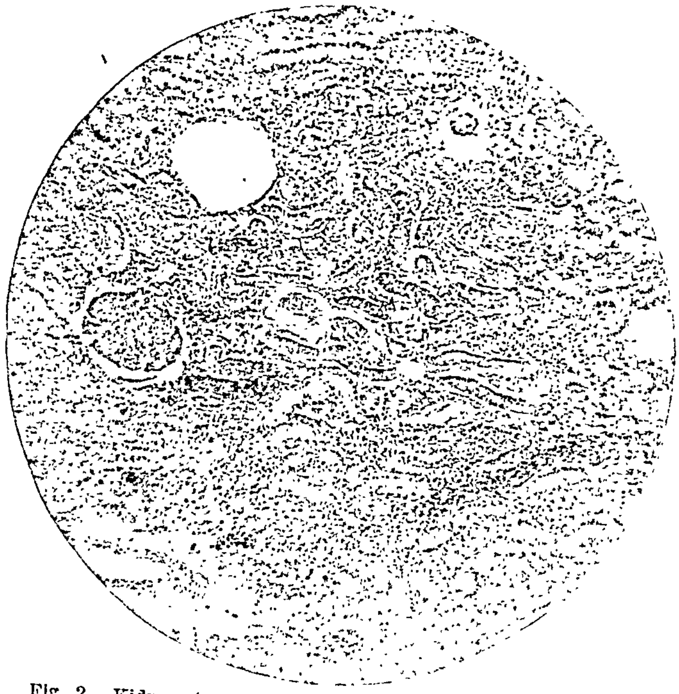

Fig. 2.—Kidney (ureters in rectum) showing invasion by the bacilli coli at an early stage of ascending infection. The dark masses in uriniferous tubules consist entirely of coli bacilli. Some contain casts which are sown with coli bacilli.

Experiment 69. Dog XII., (Dog VII., Pathological Reports.) Brown spaniel bitch. Operation January 25, 1900; died March 10th, forty-four days after operation. Ordinary technique was employed, except in trimming the vesical flap too much was removed and ureteral orifices were laid bare. Flap was sewed transversely across the bowel.

Pathologist's Report. Both kidneys show opaque adherent capsules and pyelonephritis. Both ureters patent; hydro-ureter right side; liver and spleen normal. Both kidneys show coli.

Histopathology. Necrotic papillæ. Polymorphonuclear leucocytes in tubules in great numbers, with small-cell infiltration in ureteral tissue. Some necrosis and much cloudy swelling and fatty degeneration of epithelial cells of convoluted tubules.

Experiment 74. Dog XIII. Brown female dog. Operation March 30, 1900. Left half of trigonum with mucosa removed, and right half with mucosa intact, anastomosed with rectum. Dog died in eight days from abscess of abdominal wall.

Pathologist's Report. Left kidney shows pyelonephritis; ureter normal, pyelitis, with slightly adherent capsule. Right kidney has a very adherent capsule. Organ slightly hyperemic; no pyelonephritis. Heart: yellow fibrinous thrombi in both ventricles.

Bacteriology. Smears of left kidney, cortex, and pelvis show pure coli. In the pelvis also a few tetanus bacilli. Left kidney: Cortex coli. Right kidney: Cortex contains a few very small, thin diplococci.

PLATE II.

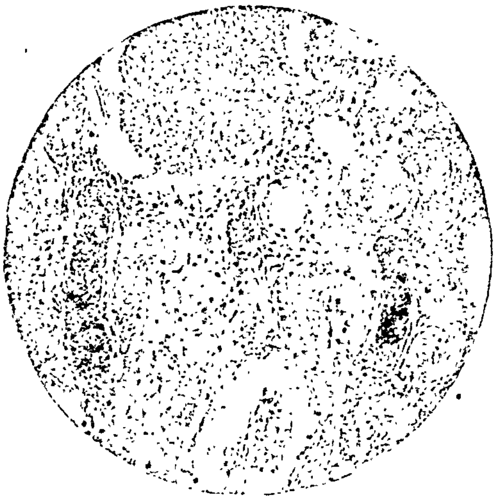

Fig. 3.—Kidney (ureters in rectum) showing invasion by the bacilli coli at an early stage of ascending infection. The dark masses in uriniferous tubules consist entirely of coli bacilli. Some contain casts which are sown with coli bacilli.

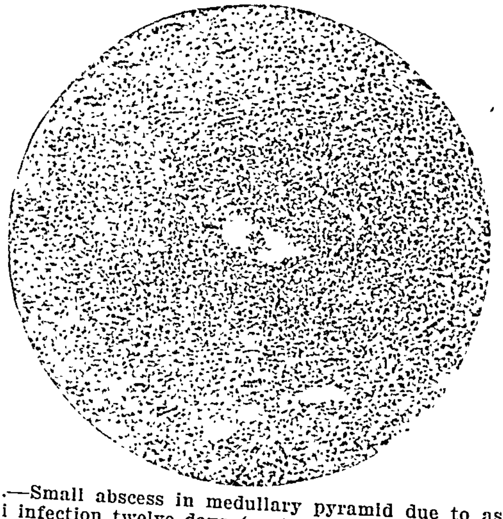

Fig. 4.—Small abscess in medullary pyramid due to ascending coli bacilli infection twelve days (ureters in rectum).

Summarizing the results of these five experiments, we find that in one case the ureter was occluded from faulty technique, with formation of an atrophic kidney. Of the four remaining cases, one had a non-infected kidney, where the trigonum was implanted intact; pyelonephritis on the other side, where a uretero-rectal anastomosis had been made. One died in forty-four days from active pyelonephritis, where the mucosa over the ureteral orifices had been accidentally removed. One lived two months without signs of infection in the kidneys. One had pyelonephritis after eight days, where the mucosa was removed from the ureteral orifice, and no signs of infection in the other kidney, where the trigonum was implanted intact.

The experiments fully confirmed the observations of others, that in the dog the rectum serves as an admirable substitute for the bladder. In most instances, directly after the operation, some rectal tenesmus existed, but this soon passed away, and the animal had perfect sphincteric control, and passed urine mixed with feces at regular intervals.

It seems questionable whether uretero-intestinal implantation without a vesical flap will ever be accomplished without a certain amount of resulting stenosis of the ureteral orifice. This stenosis may not be sufficient to entirely obstruct the urinary stream, but it will be enough to impede it somewhat and give rise to the dilatation of the ureter in varying degrees. Without having actually accomplished an anastomosis with the Boari or Chalot button, it would seem to me that the uretero-rectal union by these means would be open to the same dangers of stenosis as a union secured by the method detailed above. Boari, in the article describing his button, does not appear very sure that stenosis will not result from its use, for he speaks of a modification of the instrument whereby stenosis will be rendered impossible. The second series of experiments has proved that ascending renal infection is not prevented by an unobstructed flow of urine, since the case of lateral anastomosis without stricture was quickly followed by a violent infection.

PLATE III.

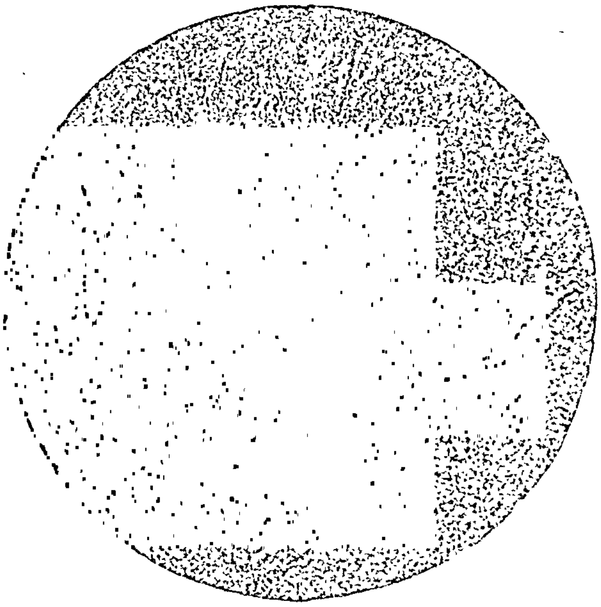

Fig. 5.—A later stage of ascending coli infection. Specimen from medullary pyramid. A central necrotic area with few bacilli, surrounded by a dense zone of leucocytic infiltration.

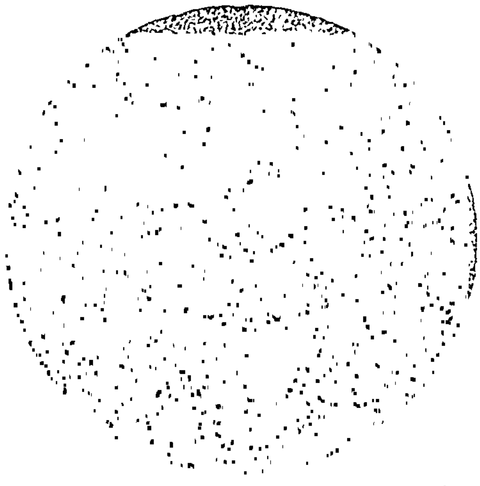

Fig. 6.—Ureter in rectum. Interstitial suppurative nephritis due to ascending coli infection. The leucocytic infiltration is so extensive that only little of the kidney structure can be seen. (Cortical portion.)

PLATE IV.

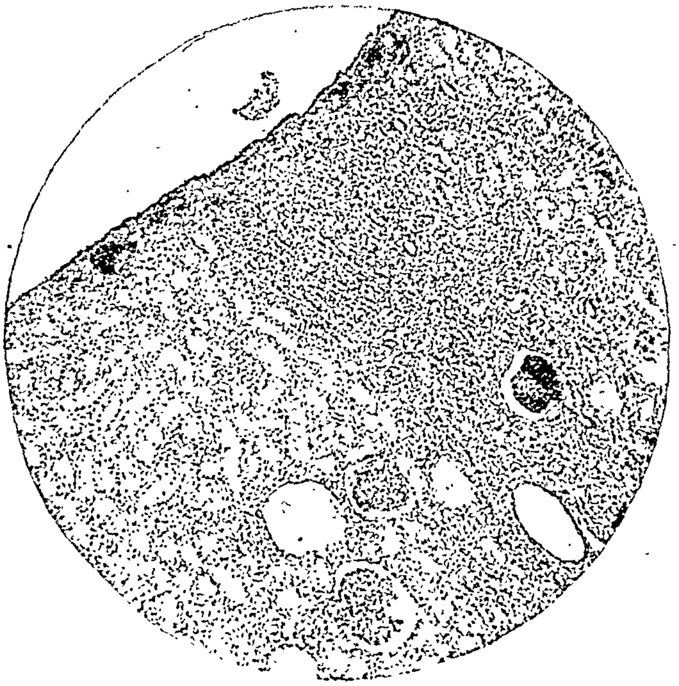

Fig. 7.—Thirteen-months dog. Granular kidneys. The dog had a pyelonephritis, became immune to coli bacilli, and the many small abscesses spread over the cortex of both kidneys resulted in retracting maturing scar tissue. The elevated portions surrounding these show fairly normal parenchyma. The retracted portions consist of matured new connective tissue with atrophic glomeruli, thickened capsules, dilated and desquamated tubules.

PLATE V.

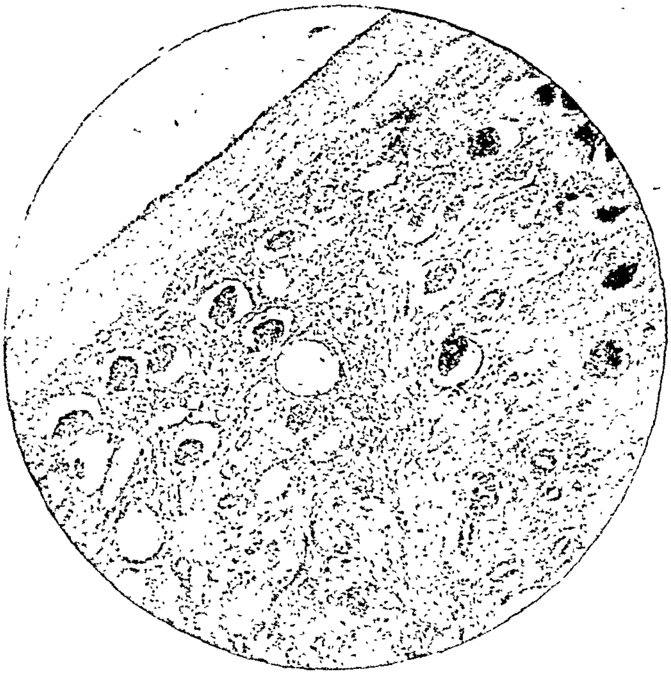

Fig. 8.—Results of healed pyelonephritis ten months after implantation of ureters into rectum. A cirrhotic contracted kidney. Only scar tissue with atrophic glomeruli, dilated desquamated tubules.

Tuffier claimed that if the ureter were cut off close to the bladder and implanted into the rectum, its musculature by forcing along the urine would keep the ureter clean and free from infection. In order to test the truth of this statement I intentionally severed the ureter as near the bladder as possible in Experiment 66, Dog X., yet pyelonephritis resulted thirteen days after the operation.

My experiments show beyond question that renal infection is not so rapid nor so severe when the vesicoureteral orifice is preserved. It is not claimed that infection will not occur after the operation, but that at least one case of uretero-rectal anastomosis where the orifices were retained intact did not show infection after two months. The animal surviving this length of time had to be killed for the purpose of this article. No amount of speculation will settle the question of infection later than two months after the operation. This must be determined by further experimental work.

PLATE VI.

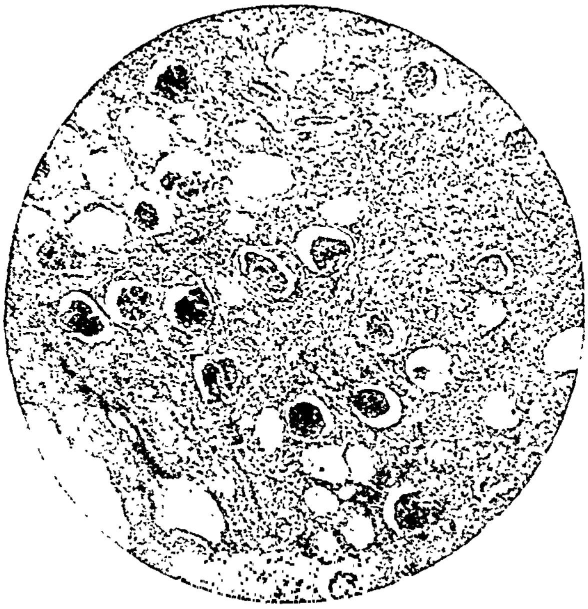

Fig. 9.—Results of healed pyelonephritis ten months after implantation of ureters into rectum. A cirrhotic contracted kidney. Only scar tissue with atrophic glomeruli, dilated desquamated tubules.

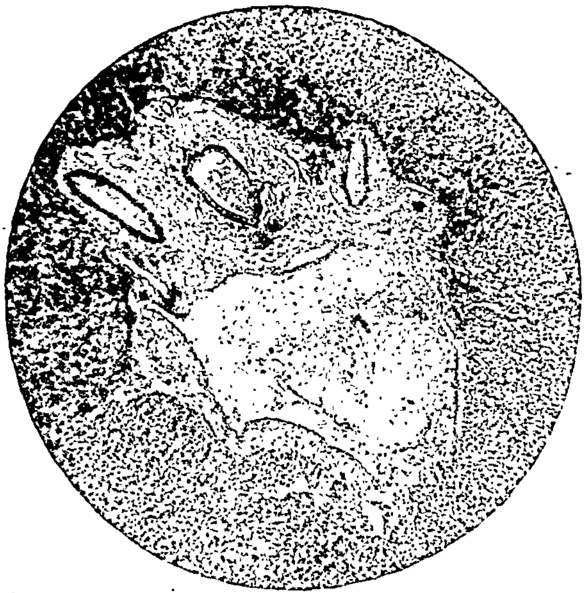

Fig. 10.—Thrombosis of portal vein. Liver. (Passive hyperemia. Atrophic areas.)

Why does not infection occur as readily when the ureteral orifice is implanted intact? Theoretically, it has been argued that infection has been prevented by the oblique course of the ureter through the implanted vesical flap, or that germs were prevented from ascending by the sphincteric or valve-like apparatus about the ureteral orifice.

That the oblique course of the ureter through the bladder-wall does not prevent an ascending renal infection has been proved conclusively by certain of my experiments. Whenever the mucosa was removed from the ureteral orifice infection resulted, although the obliquity was unchanged by this procedure. The oblique course of the ureter in the bladder-wall serves to effectually close the ureter when the bladder is distended and prevents any ureteral reflux. So perfect is this closure that a bladder can be distended with air or

PLATE VII.

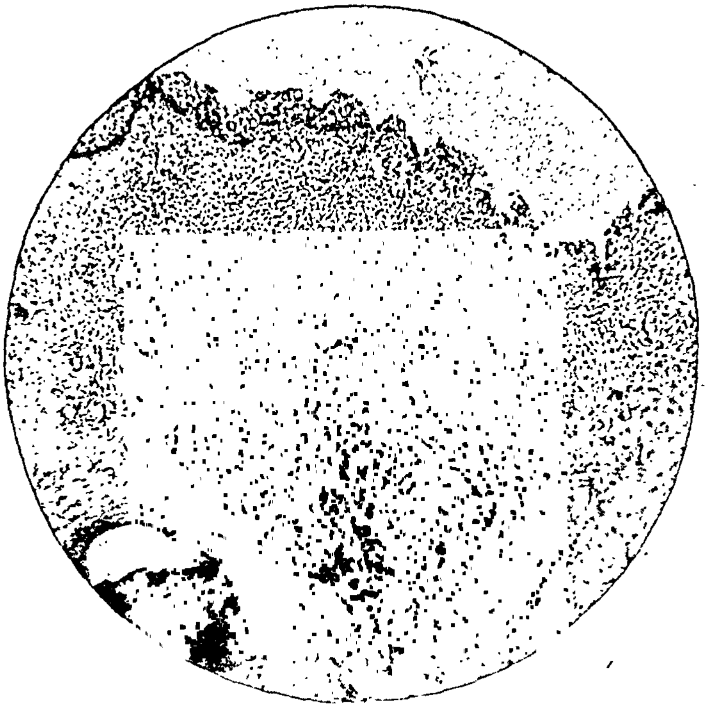

Fig. 11.—Bladder of dog with both ureters implanted in rectum. Ascending infection from urethra, causing cystitis. Much small cell infiltration of mucosa with desquamation of covering epithelium.

PLATE VIII.

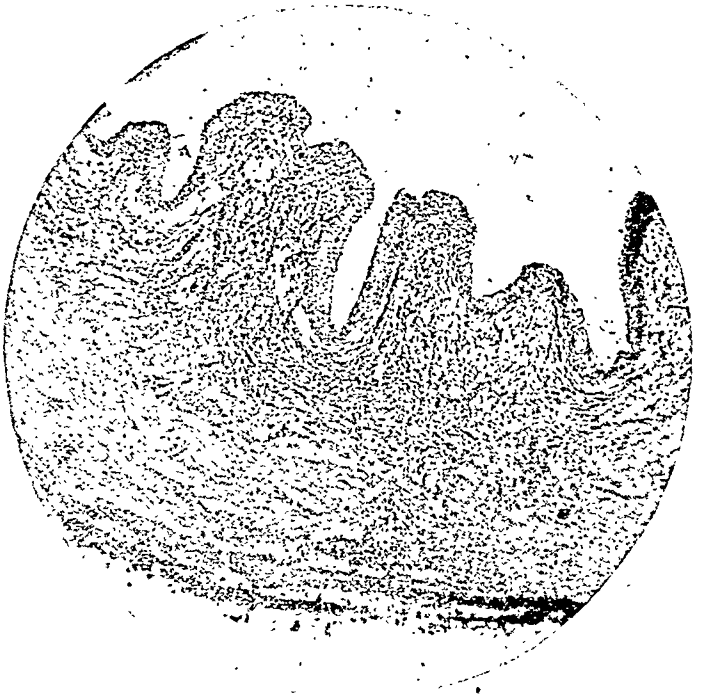

Fig. 12.—Ureter (implanted in rectum). The kidney showed pyelonephritis. The ureter looks comparatively healthy in strong contrast to the necrotic papillæ of same kidney.

water through the urethral orifice without any escaping through the ureters. This mechanical closure of the ureteral orifices does not take place after the transplantation of the vesical flap, since the rectum is not a closed cavity and the same forces are not called into play.

In order to determine definitely the relations of the ureter to the different vesical muscle layers and to ascertain the existence or non-existence of a sphincter or valve at the ureteral orifice, I caused to be made a set of serial sections through that part of the dog's bladder-wall through which the ureter passes.

The results of these microscopic examinations may be stated as follows:

1. The sections do not show a mucosal valve guarding the entrance to the ureter.
2. The circular muscle layer of the ureter is not especially prominent.
3. The bladder muscle fibers in themselves do not act as a sphincter, nor is there any sphincteric arrangement about the vesical ureteral orifice.
4. Sections of the ureter within the bladder-wall show a flat slit-like opening.

Thus it will be seen that all theories based upon the supposed action of a valve or sphincter apparatus guarding the ureteral orifice, whereby ascending infection is prevented, must be set aside from the lack of anatomical evidence. From this it will naturally follow that all attempts to prevent infection by imitating in the bowel-wall the normal course of the ureter will prove futile, as the post-mortem findings of Martin's cases have clearly shown. Beck's theory that in his case infection was prevented by inserting a portion of the ureter within the bowel has been shown to be incorrect by numerous experiments. The portion of the ureter lying within the bowel soon completely sloughs away, and, far from preventing infection, is one of the chief factors in its production.

What can be said of Fowler's mucous valve formation for preventing infection? As far as the case is concerned the patient is still living and apparently well after three and a half years, yet experimental work would lead us to conclude that the kidneys have been infected, but that the infection has been overcome with resulting contracted kidneys. In order to ascertain the value of such valve formation as Fowler recommends, I performed the operation upon a dog, March 31, 1900, carrying out his technique strictly, except that only one ureter was implanted. The dog recovered and was killed at the end of twenty-seven days. The kidney corresponding to the implanted ureter was decidedly smaller than the other and showed evidence of ascending infection. No bacteriologic or microscopic report on the specimen has yet been made. The ureter was slightly dilated. There was not only no vestige of the ureter which had projected into the bowel cavity, but the mucous flap itself had disappared, and the ureter, fairly patent, opened through a small slit in the mucosa.

The most plausible theory regarding infection or non-infection would seem to be that any traumatism to the ureter, whether in the form of its complete section or injury to its orifice by removal of the vesical mucosa, sets up an inflammatory action about the ureteral orifice which diminishes its power of resistance and allows of ascending infection. Whatever method of intestinal anastomosis of the severed ureter be employed, inflammatory changes are bound to be present, and infection will follow. Whereas, when the ureteral orifices are implanted together with the bladder flap, any operative traumatism is exerted upon the latter and the unaffected ureteral orifices are able to prevent the entrance of bacteria.

GENERAL CONCLUSIONS.

1. The primary mortality of uretero-intestinal anastomosis, both in experimental work on animals and in man, is exceedingly high.
2. The best technique is that requiring the least amount of suturing of the ureters themselves.
3. All efforts to prevent ascending renal infection in animals or in man where the ureter has been implanted without its vesical orifice have proved futile.
4. It is impossible to determine in advance the extent of the infection which will result from uretero-intestinal anastomosis. The patient may die in a few days of a pyemia or in a short time of pyelonephritis, or in rare cases may recover from the infection, with resulting contracted kidneys.
5. Hence the operation is unjustifiable, either for the purpose of making the patient more comfortable, as in exstrophy of the bladder, vesico-vaginal or uretero-vaginal fistula, or for malignant disease of the bladder.
6. The results of uretero-intestinal anastomosis through the formation of vesico-rectal fistulæ have not been favorable up to the present time.
7. The success of Frank's experimental work in vesico-rectal anastomosis justifies the expectation that the future results of this operation will be more satisfactory.
8. The primary mortality of utero-trigono-intestinal anastomosis is low for an operation of this magnitude.
9. While it can not be denied that ascending renal infection may occur after this operation, the infection, as a rule, is of such a type that the chances of the individual's overcoming it are good.
10. Hence the operation of implanting the vesical flap with its ureteral orifices into the intestine is a justifiable surgical procedure.
11. There is no valve guarding the vesico-ureteral orifice; nor does the circular muscle layer of the ureter nor do the bladder muscles themselves act as a sphincter.
12. It has been abundantly demonstrated by experimental and clinical work, that the rectum tolerates the presence of urine and acts as a good substitute for the bladder, and that good control over the anal sphincter will be maintained.

BIBLIOGRAPHY.

Animal Experiments with Uretero-intestinal Anastomosis.

1. Bardenhauer: Extraperitonealer Explorativschnitt. Stuttgart, 1887, p. 273. See also Mazel, Ueber Blasenektopie und deren operative Behandlung. Beiträge zur klin. Chirurgie, 1889, Bd. xxiii, p. 478.

2. Boari, A.: Manière facile d'aboucher les uretères sur l'intestin sans sutures. Recherches expérimentales. Ann. mal. gén. urin., 1896, v, xiv, pp. 1-25. Translation in Columbus Medical Journal, 1897, vol. xix. pp. 1-20.

3. Chaput, H.: De l'abouchement des uretères dans l'intestin. Archiv. gén. de Méd., January, 1894, pp. 5-30. Also Annals of Surgery, 1894, vol. xx, p. 193.

4. Duval (P.) et Tesson (R.).: De l'abouchement des uretères dans le côlon; urétéro-colostomie. Revue crit périmentales. Ann. mal. org. gén.-urin., 1900,

5. Frank, J.: Vesico-rectal anastomosis. corder, 1899, vol. xvii. pp. 371-376, 425-435. of Bladder to Rectum. Journal of the American Medical Association, 1899, vol. xxxiii, pp. 132, 133.

6. Giordano, D.: Del l'innesto degli ureteri nel crasso intestino e dell' e sportazione della vesica e della prostata. Riforma Medica, 1892, p. 117. Sulla quistione se si possano tranpiantare gli ureteri nel retto. Clinica Chirurgica, Milano, 1894, p. 81.

7. Glück and Zeller: Ueber Extirpation der Harnblase und Prostata. Archiv f. klin. Chir., 1881, Bd. xxvi, pp. 916-924.

8. Kalabin, J.: Zur Frage über die Implantation der Ureteren. Cent. f. Gynäk., 1899, vol. xxiii, pp. 1078-1080. Zur Frage von den Veränderungen in der Schleimhaut des Darmes und der Nieren nach der Implantation des Harnleiters in den Darm. Cent. f. Chir., 1899, vol. xxvi, pp. 1339-1341. Abstract in the Journal of the American Medical Association, 1900, vol. xxxiv, p. 104.

9. Krynski, L.: Zur Technik der Ureteren Implantation in den Mastdarm. Cent. f. Chir., 1896, Bd. xxiii, p. 73.

10. Lestrade, A. Chirurgie de l'urétere spécialement dans les rapports avec la chirurgie gynécologique. Thèse de Toulouse, 1898. Abst. Jahresb. f. Chir., 1898, iv. p. 853.

11. Lindner: Verhandl. d. Deut. Gesel. f. Chir., 1895, Bd. xxiv, p. 132.

12. Martin, F. H.: Implantation of Ureters in Rectum. A Method Having for Its Obje[illegible]equent Infection of the Ureters and Kidneys. [illegible] THE AMERICAN MEDICAL ASSOCIATION, 1899, [illegible] Further Report on the Implantation of the Ureters in the Rectum, with Exhibition of Specimens. American Gynecological and Obstetrical Journal, 1899, vol. xiv, pp. 636-642; ibid., p. 307.

13. Matas, R.: Exstrophy of the Bladder. Operative Treatment, with Special Reference to Maydl's Operation. JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 1899, vol. xxxiii, pp. 260-263.

14. Morestin: Greffe de l'uretère dans le rectum. Ann. mal. gén. urin., 1893, vol. xi, p. 224.

15. Mauclaire, P.: De quelques essais de chirurgie expérimentale applicables au traitement (*a*) de l'extrophie de la vessie; (*b*) des abouchements anormaux du rectum; (*c*) des anus contrenature complexes. Congrès Français de Chirurgie, 1895, pp. 546-552.

16. Novaro, G. F.: Dell'innesto degli ureteri nel retto e della esportazione della vesica e della prostata. Boll. della Soc. tra i cultoridelle Sc. Med., No. 5, 1887, Siena. Abstr. Centr. f. Chir., 1888, vol. xv, p. 35.

17. Paoli and Busachi. Medical Congress of Pavia, 1888. Abstract. See Chaput, loc. cit. (3).

18. Pisani, U.: *Policlinico*, July 1, 1896. Abst. Centr. f. Chir., 1897, vol. xxiv, pp. 631-632.

19. Reed, R. H.: Experimental Research on the Implantation of the Ureters into the Rectum. Annals of Surgery, 1892, vol. xvi, pp. 193-210.

20. Rosciszewski: Die Transplantation der Ureteren in den Mastdarm. Vortrag. in der IV. Versammlung polnischer Chirurgen in Krakau. Aertzlicher Centralanzeiger, 1892. p. 455. Abst. in Mazel (1), p. 480.

21. Thompson: Ueber die Behandlung von Verletzten Ureteren. Zeitsch. f. Geb. u. Gynäk., 1893, vol. xxvi, pp. 173-183.

22. Tizzoni and Pozzi: La Riforma Medica, 1888.

23. Tuffier, T.: La greffe des uretères dans l'intestin. Ann. mal. gén. urin., 1888.

24. Van Hook, W.: The Surgery of the Ureters. A Clinical, Literary, and Experimental Research. JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 1893, vol. xxi, pp. 911-965.

25. Vignoni, E.: Del traplamento degli ureteri nell' intestino. Gazz. Med. di Torino, 1895, No. 2. Abstr. Centr. f. Chir., 1896, vol. xxiii, p. 85.

Uretero-intestinal Anastomosis without the Preservation of the Vesico-ureteral Orifice.

26. Beck, C.: Implantation of both Ureters into Sigmoid Flexure. Chicago Medical Recorder, 1899, vol. xvii. pp. 303, 429.

27. Boari, A.: Loc. cit. (2).

28. Casati, E.: See Boari, loc. cit. (2).

29. Chalot. [illegible] systématique des deux uretères et la ligature [illegible] artères iliaques internes pour extirpation lar[illegible] de l'utérus par l'abdomen. Indépendance Médicale, 1896, p. 297. Also Archiv. de Gyn. et de Tocol., 1896, T. xxiii, pp. 785-794.

30. Chaput, H.: Loc. cit. (3).

31. Duplay, S.: Du traitement chirurgical de l'exstrophie de la vessie. Archiv. gén. de méd., 1894, vol. ii. pp. 322-334.

32. Evans, E.: Unpublished case. Personal communication to author. Referred to in discussion of Dr. D. J. Hay's paper, Transactions of the Wisconsin State Medical Society, 1899.

33. Fowler, G. R.: Implantation of the Ureters into the Rectum in Exstrophy of the Bladder, with a Description of a New Method of Operation. American Journal of the Medical Sciences, N. S., 1898, vol. cxv. pp. 270-276.

34. Fritsch, H.: Handbuch der Gynäkologie, 1897, Bd. ii, S. 13.

35. Krause, F.: Totale Extirpation der Harnblase. Münch. med. Woch., 1899, pp. 1443, 1578.

36. Küster, E.: Neue Operationen an Prostata und Blase. Langenbeck's Archiv, 1891, vol. xlii, p. 864.

37. Martin, F. H.: Removal of the Bladder as a Preliminary to or Coincidental with Hysterectomy for Cancer, in Order to Extend the Possibilities of Surgery for Malignant Disease of the Pelvis. The American Gynecological and Obstetrical Journal, 1900, vol. xvi, pp. 395-429.

38. Peters, George A.: JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 1899, vol. xxxiii, p. 669.

39. Rein: Ueber radikale Heilung von Ektropien der Blase. Centr. f. Gyn., 1894, Bd. xviii, pp. 393-394.

40. Roux, Jules: Exstrophie de la vessie; autoplastie pour masquer la difformité et créer un réservoir capable de retenir l'urine pendant un certain temps; insuccès; éstablissement définitif d'un canal cutané propre à maintenir en place un réservoir en caoutchouc vulcanisé. Union Méd., 1853, vol. vii, Nos. 114, 115.

41. Schnitzler, J.: Wien. klin. Woch., 1898, Bd. xi, p. 990.

42. Simon, J.: Ectropia Vesicæ; Absence of the Anterior Walls of the Bladder and Pubic Abdominal Parietes; Operation for the Directing of the Orifices of the Ureters into the Rectum; Temporary Success; Subsequent Death; Autopsy. Lancet, 1852, vol. ii, pp. 568-570. See also Transactions of the Pathological Society of London, 1855, vol. vi, p. 256.

43. Smith, P.: An Account of an Unsuccessful Attempt to Treat Extroversion *of* the *Bladder* by a New Operation. St. Bartholomew's Hospital Reports, 1879, vol. xv. pp. 29-35.

44. Trendelenburg: Deut. Gesell. f. Chir., 1895, p. 132. See also P. Mathes, Deut. Zeitsch. f. Chir., 1897, Bd. xlv, p. 136.

45. Tuffier, T.: Duplay et Reclus. Traité de Chir., 2d éd., Paris, 1899, vol. vii, pp. 441, 464.

46. Tuffier et Dujarnier: Extirpation totale de la vessie. Rev. de Chir., 1898, T. xviii, p. 281.

47. Turetta: L'extirpation totale de la vessie. Thirteenth Congress Italian Surgeons, Rev. de Chir., 1900, vol. xix, January-June, p. 273.

48. Walsham, W. J.: On Extroversion of the Bladder. Practitioner, 1899, vol. lxii, pp. 151-163.

49. Von Winiwarter: Reported by Hogge. Ann. mal. gén. urin., 1898, p. 838. Complete Removal of Bladder, Prostate, Seminal Vesicles, Entire Urethra, and Penis, Scrotum and Its Contents, for Tumor of the Bladder. Abstract from Therapeutic Gazette, 1899, vol. xxiii, p. 632.

50. Wood, W. C.: Philadelphia Medical Journal, 1899, vol. iii, p. 133.

Uretero-trigono-intestinal Anastomosis.

51. Allen, D. P.: *Exstrophy of the Bladder.* JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, vol. xxxiii, pp. 258-260.

52. Bergenhem: Ectopia vesicæ et adenoma de struens vesicæ; Exstirpation af blosan; Implantation af ureterenn i rectum. Eira, 1895, No. 10, Abst. Centr. f. Chir., 1896, vol. xxiii, p. 380.

53. V. Eiselsberg, A.: Zur Casuistik der Ureteren Implantation in den Darm. P. Mathes, Deutsche Zeitsch. f. Chir., vol. xlv, pp. 136-153. Vereins-Beilage der Deut. med. Woch., 1899, vol. xxv, p. 177.

54. Ewald, Carl: Wien. klin. Woch., 1897, vol. x, p. 133. Ibid., vol. xi, 1898, p. 990.

55. Frank, Rudolf: Wien. klin. Woch., 1898, vol. xi, p. 989. Ibid., 1899, vol. xii, p. 64.

56. Herczel, Emil: Radikaloperation der Blasenpalte (Ectopia Vesicæ) durch Implantation der Harnleiter in den Dickdarm. Centr. f. d. Krank. d. Harn. u. Sexual. Org., 1899, vol. x, pp. 563-585.

57. Krynski, L.: Wien. klin. Woch., 1896, vol. ix. p. 972.

58. Maydl, K.: (Cases 18-19.) Ueber die Radikaltherapie der Ectopia Vesicæ Urinariæ. Wien. med. Woch., 1894, vol. xliv, Nos. 25-29.

59. Maydl, K.: (Cases 20-22.) Neue Beobachtungen von Ureterenimplantation in die Flexura romana bie ectopia vesicæ. Wien. med. Woch., 1896, vol. xlvi, Nos. 28, 30, 31.

60. Maydl, K.: (Cases 23-27.) Weitere Erfahrungen über Implantation der Ureteren in die Flexur bei Ectopia Vesicæ. Wien. med. Woch., 1899, vol. xlix, Nos. 6, 7, 8.

61. Mikulicz, T.: Zur Operativen Behandlung der angeborenen Blasenspalte. A. Tietze. Beiträge z. klin. Chir., Tübingen, 1897, vol. xviii, pp. 1-78.

62. Nové Josserand, G.: Traitement de l'exstrophie vésicale par l'abouchement des uretères dans l'intestin. Rev. Mens. des mal. de l'enfance, 1899, vol. xvii, pp. 258-262.

63. Park, Roswell. Exstrophy of the Bladder, with Other Congenital Defects; Maydl's Operation. Medical News, 1897, vol. lxx, pp. 702, 703.

64. Resegotti: Sopra un caso di innesti degli ureteri nella inflessione iliaca. Giorn. ella R. Acad. di Torino, 1896, Nos. 8, 9.

65. Schnitzler: Vid. Mazel, loc. cit. (1), p. 483.

66. Trombetta: Eleventh Congress Italian Surgical Society, Rome, Oct. 25-29, 1896. Abstr. Centr. f. Chir., vol. xxiii, S. 1255.

67. Tuffier, T.: Guérison de l'extrophie de la vessie par la cystocolostomie. Gaz. hebdom. de méd. et de chir., Paris, 1898, p. 661.

68. Wölfler: Mazel, Beiträge zur klin. Chir., 1899, Bd. xxiii, pp. 484, 488.

Uretero-intestinal Anastomosis by Formation of Fistulæ.

69. Gallet: Ann. mal. gén. urin., 1896, vol. xiv, p. 463.

70. Halstead, A. E.: Unpublished Case; Communication to Author.

71. Holmes, T.: Surgical Treatment of the Diseases of Infancy and Childhood, 2d edition, Philadelphia, 1869, p. 148.

72. Johnson, Athol: Vid. Holmes, loc cit., p. 148.

73. Keen, W. W.: The Surgical Complications and Sequels of Typhoid Fever. Philadelphia, 1898, p. 80.

74. Loyd: Ectopia Vesicæ (Absence of the Anterior Walls of the Bladder); Operation; Subsequent Death. Lancet, 1851, vol. ii, pp. 370-372.

75. Novaro: Nouvelle opération de l'extirpation complète de la vessie. Verh. Tenth International Congress, Berlin, 1890, vol. iii, pt. 7, p. 209.

76. Resegotti: Contributo alla cura radicale dell' ectrofia della vesica. Gaz. Med. di *Torino*, 1895, No. 47. Abst. Centr. f. Chir., 1896, Bd. xxiii, p. 188.

77. Rose, E.: Ueber den plastischen Ersatz der weiblichen Harnröhre. Deut. Zeit. f. Chir., 1878, Bd. ix, S. 122-137. See also Mazel, Beiträge z. klin. Chir., 1899, Bd. xxiii, S. 472.

78. Thiersch: Verhand. der deutsch. Gesell. f. Chir., 1882, vol. xi. p. 89.

79. Tuffier: Duplay et Reclus. Traité de Chir., 1891-92, 1st ed., vol. vii, p. 696.

General References.

80. Chavannas, G.: Des fistules vésico-intestinales acquises chez l'homme. Ann. mal. gén. urin., 1897, vol. xv, p. 1176.

81. Gersuny: Wien. klin. Woch., 1898, No. 43, p. 990.

82. Lotheissen, George: Ueber Uretertransplationen. Wien. klin. Woch., 1899, vol. xii, pp. 883-888.

83. Richardson, Richard: Several Observations in Natural History, made at North Bierly, in Yorkshire [1713]. Philosophical Transactions of Royal Society of London (Abridged), 1809, vol. vi, p. 45, No. 337, Art. 18, p. 167.

84. Rutkowski, Max: Zur Methode der Harnblasenplastik. Centr. f. Chir., 1899, vol. xxvi, pp. 473-478.

85. Soneiro: L'implantation des uretères dans le côlon; Urétéro-colo-néostomie. Thèse de Paris, 1899, No. 516.

86. Wendel, O.: Ueber die Exstirpation und Resektion der Harnblase bei Krebs. Beiträge z. klin. Chir., 1898, vol. xxii, S. 243-270.

87. Willms: Ein Beiträge zur ureteren Transplantation. Heidelberg, 1898, Diss.

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Quinin as an Oxytoxic.—McGee (*Bul. of Cleveland General Hospital*, ii, No. 4) believes quinin possesses evident power as an oxytoxic. He has "given it in almost a routine manner for years, in cases of uterine *inertia*." He finds that while it will not initiate labor pains in pregnancy, in the second stage of labor, when there is an obstacle to delivery or contractions are deficient in force, it frequently increases their power and so hastens delivery. He *ascribes* its effects to a general tonic action and increase of nervous energy, rather than to any specific power, such as ergot has, and he says it is devoid of the dangers of the latter. He gives 5 grs. every twenty minutes or so till about 20 grs. are taken; it is best prescribed in solution; added to a small quantity of brandy or whisky diluted with hot water and well sweetened, he finds it is rarely refused.

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DIPHTHERIA.

There are few chapters in the history of medicine more interesting and more complete than that of the evolution of our knowledge of diphtheria; and the stages by which this advance has been made have been the result not of accident nor of chance, but of systematic and industrious investigation of the best scientific character, interpreted by a high order of intelligence. Ulcerous and membranous anginas have long been recognized and described, but the first severe and widespread epidemics of recent times are recorded as having occurred in the seventeenth and eighteenth centuries. During the early part of the nineteenth century France was assailed by numerous disastrous epidemics, which played sad havoc, even among the royalty, so that Napoleon I., in 1807, offered a prize for the best essay on croup. Great confusion regarding this disease existed until Bretonneau published his famous work in 1826.

Escherich,[1] in an interesting communication, discusses the changes that have taken place in the clinical conception of the term diphtheria in the course of the past century, especially as a result of bacteriologic investigation, as well as certain related topics. Bretonneau not only verified previous descriptions of the disease, its dissemination by contagion, the appearance of the deposit, the stenotic and toxic characteristics of its course, and the varying localizations and sequels; but he further established the pathologic-anatomic basis of these manifestations. From epidemiologic and postmortem considerations, he divined the specificity of the disease, and suggested the existence of a living contagium. Clinically he recognized the identity of croup and diphtheria, attaching the greater importance, however, to the effects of laryngeal obstruction, to the neglect of the symptoms of intoxication. He appreciated the utility of tracheotomy and practiced it successfully. Trousseau, a friend and pupil of Bretonneau, laid great stress on the toxic manifestations, and considered the disease a general one with local lesions.

Confusion arose from the application of the terms croupous and diphtheritic to fibrinous or membranous deposits upon mucous membranes in general, and the inclusion of all superficial necrotic lesions of wounds and the various mucous membranes, especially the tonsils in cases of scarlet fever, under true diphtheria. The final and decisive discrimination was, however, not reached until the discovery by Klebs, in 1883, and the cultivation by Lœffler, in 1884, of the diphtheria bacillus. This was followed by the isolation of the toxin generated by the bacillus, and this, in turn, by the development of immunizing methods in animals, and finally, in 1894, by the preparation of the antitoxin—the entire series of events constituting one of the most brilliant and most beneficent discoveries in the history of medicine. The severity and the course of the disease were at first attributed directly to the virulence and the number of the active bacilli, but evidence was soon discovered showing that those conditions are due in no small measure to the state of the body, and that this is probably dependent on the presence or absence of protective substances. An additional factor is to be found in the existence of mixed infection, in part with streptococci.

The most important feature of the advance in our knowledge of diphtheria consists in the treatment and its results. Debilitating and antiphlogistic means were superseded by general supporting and vigorous local treatment with astringents, caustics and antiseptics, while tracheotomy and later intubation came into practice for the relief of laryngeal stenosis. The use of steam for inhalation proved a useful adjunct. The results of treatment were, however, unreliable and unsatisfactory until the discovery of the antitoxin in 1894. Since then the mortality has been cut in half, the gain being most marked the earlier the specific remedy is employed and the dose chosen sufficiently large. The necessity for surgical intervention has also become less, and, when it has been required, the results have been better than heretofore, while complications and sequelæ are more uncommon. The prophylactic value of the antitoxin is somewhat impaired by the circumstance that the immunity conferred is of brief and uncertain duration, but evidence exists showing that it may nevertheless be successfully directed to the breaking up of epidemics in hospitals and other institutions, and in private dwellings. In the treatment, it can not be too forcibly emphasized that the dose to be employed is the largest that the severity of the case indicates, and its repetition will be influenced by the same criterion. An important point to be appreciated is the necessity for employing as concentrated solutions as possible, as such secondary effects as have been observed after injection of the antitoxin are due not to the active principles but to the serum in which they are dissolved. The two possible contraindications to the use of the antitoxin consist in the presence of nephritis and the so-called lymphatic constitution.

THE STEREOGNOSTIC SENSE.

In 1883 Charles Bell originated the term "muscular sense," and attributed the conception of place and position to a particular form of sensation located in the muscles. This sense was thought to be a primitive one, due directly to the "organic activity of the muscular contractions." According to Puchelt, it was assigned the rôle in the perception of form and was called, at the time, the stereognostic sense.

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[1] Berliner klin. Woch., 1900, No. 2, p. 33.

It is to-day generally believed that the stereognostic sense is dependent on the use of the tactile and muscular senses. To examine the stereognostic sense of a patient methodically, one has only to use geometrical bodies, such as balls, half-spheres, octahedrons, etc., preferably made of wood, measuring from 3 to 6 cm. in diameter, and ask the patient to describe them, as they are placed in his hands.

As the result of a somewhat exhaustive study, Sailer[1] has concluded that the stereognostic sense is due to a complex sensory perception, the impulses of which are probably received in the parietal lobe of the brain and then recognized in consciousness by some higher center or group of centers; that it is lost if tactile sense is lost, is greatly impaired or lost if localization-sense is lost, and is usually, but not always, disturbed if the muscular sense is lost.

The nature of the stereognostic sense, upon which the faculty of orientation is in all probability based, is still thrown open to question by the doubt cast at the present d y upon the existence and nature of the muscular sense. This latter sense receives much attention in neurologic literature, though physiology has not yet fully recognized the existence of such a special form of sensation. Since Bell's first mention of it, there have been promulgated many views to explain the perception of active and passive motion, resistance, weight, solidity, volume and position. Some are inclined to regard it as an elementary sense inherent in the muscular fibers, or at least dependent on special nerves going to those fibers. Lewinski argued that the muscular sense was merely the sense of motion perceived by the tactile organs found in and around the articular surfaces of the joints. Schiff taught that the tactile organs in the skin overlying the contracting muscles, gave rise to the sense of active and passive movement. Others demonstrated that the muscular sense depended on a multiplicity of indistinct sensations, localized in the body segments, articulations, muscles and skin, the skin being by far the most prominent. It was taught by the psychic school that the sense of muscular activity is really due to a central perception of the effort exercised at the periphery; that there is a conscious perception of the muscular conditions in general; and that of course any change in those conditions will immediately be recognized and correlated in the sphere of consciousness. In 1893 Wundt declared that the muscular sense was in no way to be attributed to the exercise of the muscles, but rather to the "cellular function of the motor zones" in the cortex. Oppenheim recommends that the term "muscular sense" be dropped entirely; for, according to the definition by Goldscheider, it includes the sensation of passive movement, the sensation of active movement, the sensation of heaviness and resistance, and the sensation of position.

In a recent and noteworthy monograph Bonnier[2] frankly declares that there is no special muscular sense, but that the so-called muscular sense and all it includes is nothing more nor less than a modified form of ordinary tactile sense. We have a sensation of attitude or variation of attitude, due to a sensation of segmental or peripheral activity, and a sensation of central activity or innervation. This segmental sensation is an internal tactile sense—articular, aponeurotic, ligamentous, muscular, etc.—and is merely an adaptation and transformation of the external tactile sense. It is comparable to the involution of the tegumentary structures recognized in the evolution of the eye, ear and other special senses. The stereognostic sense, therefore, as well as the sense of orientation in its large acceptation, and even the abstract notions of time and space are, according to these views, to be attributed, in their last analysis, to the fundamental, universal, simple sense of touch.

BACTERIOLOGY OF INFECTIONS OF THE URINARY TRACT.

The bacteriology of infections of the urinary tract is a rather new subject. Thomas R. Brown[3] makes a report of an investigation of this subject in women, which was made under exceptionally favorable conditions. Most of the acute cases were post-operative and the conditions surrounding the infection were carefully studied; careful cystoscopic examinations were made in all the chronic and most of the acute cases; and thirdly in all suspected renal infections the urine was obtained directly from the kidneys by ureteral catheterization. A brief summary is given of the more important findings as the complete paper will be published later. The cases of cystitis are divided into acute, chronic and tuberculous. The cases of acute cystitis are of great interest because in twenty-four of twenty-six the infection was post-operative, the urine having been examined bacteriologically immediately preceding the operation. These cases, therefore, throw needed light on the question which micro-organisms bring on infection. B. coli communis was found fifteen times, the white pus coccus five times, the yellow twice, the bacillus pyocyaneus, typhosus, and proteus vulgaris once each. In all these cases the urine was acid except the one due to B. proteus vulgaris. Catheterization is held responsible for the infection, although the procedure was carried out with great care. The usually low pathogenic power of these organisms emphasize the importance of other and accessory etiologic factors, the most important, according to Brown, being anemia, pressure on the bladder, sagging of the bladder, trauma and catheterization with poor technique.

Thirty-one cases of chronic cystitis were studied with approximately the same general results as in the series of acute cases. In 7 a pyelitis coexisted. There were 6 cases of tuberculous cystitis, the majority being associated with tuberculous pyelitis or pyelonephritis. The urine was acid, usually rich in pus and red blood-cells.

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[1] Jour. of Nerv. and Ment. Dis., March, 1899.

[2] L'Orientation, par le Dr. Pierre Bonnier. Scientia: Biologie, No. 9, Paris, April, 1900.

[3] Johns Hopkins Hospital Bulletin, 1901, xii, 4.

The cases of pyelitis and pyelonephritis are of exceptional interest because the urine was obtained directly from the kidney, and usually from both kidneys, so that the two sides could be compared. The only two acute cases were secondary to vesical infection with B. coli. Twelve chronic cases were studied and 5 of these were evidently ascending ureteral infections. B. coli was present in 6 cases, B. proteus vulgaris in 3, and a white staphylococcus in 2, one case showing sterile urine. In the cases not due to B. coli, the urine was alkaline and in all a renal calculus of calcium and magnesium phosphates and carbonates was present. This shows in a striking manner the relation between infection and calculus formation. Six cases of tuberculous pyelitis and pyelonephritis were met with, all associated with the tubercle bacillus in pure culture.

These details are given to show the general trend of the results obtained by this interesting work. In the discussion, Dr. Young refers to dissimilarity of the results obtained by him in a similar study in the male. Young has found a much greater number of different bacteria and among them the gonococcus several times. Gonococcus infections of the bladder are more frequent in men than women, owing to the greater severity of gonococcal urethritis in the former. The ease with which the male bladder may be aspirated for cultures offers good opportunities for studying gonococcal and other vesical infections.

As pointed out by Welch, it would be a one-sided view which failed to take into consideration in the etiology of cystitis and pyelitis the non-bacterial factors, because the bacteria found in the urinary infections have ordinarily very limited pathogenic activity. Finally, it may be mentioned that Hunner refers to 3 cases of pelvic stone associated with streptococci.

Enough has been mentioned to indicate that observations are accumulating which will do much to clear up the various unsettled contentions in regard to infections of the urinary tract and to place our therapy on a safe basis.

THE BACHELOR'S DEGREE AND THE MEDICAL COLLEGE.

The question whether the bachelor's degree should be required for admission to professional schools was considered at a conference of educators recently held in Chicago, and was the special topic of an after-dinner speech by Prof. Ira Remsen of Johns Hopkins University. This problem, while seemingly simple, is in reality quite complex. As Professor Remsen said, there is a great difference between B. A. degrees, the difference depending largely on the college from which the degrees are obtained. A bachelor of arts from a really first-class institution has had, it may safely be asserted, a broader and a more complete training than has one who has obtained a similar degree from some ill-equipped school unfortunately dubbed a college and authorized to grant degrees, but which is little more than a high school or seminary.

If a bachelor's degree could have some definite meaning attached to it, by an agreement among the colleges and universities, as to requirements, it could be unhesitatingly accepted as proof of qualification for admission to the medical or other professional school.

There is, however, another point to be considered. With the liberty allowed a student in our first-class institutions, it is possible for a man to graduate without having taken those studies best fitted to enable him to pursue most advantageously his subsequent medical course. A student may have taken, as his elective studies, only French or mathematics, or astronomy, or geology, and yet be graduated *magna cum laude* with the bachelor's degree, and claim a right to enter the medical college. It is clear that he would be better fitted had he devoted some of his time to certain other branches, as biology, chemistry, botany, physics, etc. It follows that the faculty of the medical college has a right to ask those who apply for admission on the B. A. degree not only from what college they come, but what studies have been taken in order to secure the degree.

This leads to a consideration of the important topic of premedical courses in our literary colleges. Should not students who contemplate the study of medicine be early guided into courses especially adapted to prepare them for the medical college, into physics, chemistry, biology, with histologic technique, German and French studies that can be made to have a cultural influence as well as philosophy, Greek, or higher mathematics? And should not the student in a university in which the medical school is a part of that university receive credit in both the literary and the medical departments for certain work? This is already done to a certain extent at not a few universities, so that when a man takes his bachelor's degree in art or science, he has also credits in his medical course for one or even two years' work.

LEGISLATION ON HYPNOTISM.

A bill has been introduced in the New York legislature for regulating the practice of hypnotism, mesmerism, suggestive therapeutics, and allied phenomena. License is required from the Board of Regents of the University, and to obtain it a good general education and at least two years in a medical school are required. Any unauthorized practice or advertising of ability for such is to be made a misdemeanor, and penalties of fine and imprisonment are provided for by the act. In regulating the therapeutic and otherwise employment of hypnotism, New York State will have a precedent in the legislation or local ordinances of several European countries which have prohibited the unauthorized practice of inducing the hypnotic condition. Its possible dangers are sufficiently well known, moreover, to fully justify the proposed measure.

ONTARIO'S VITAL STATISTICS.

The Registrar-General of the Province of Ontario recently published the complete returns of births, marriages and deaths, which are considered encouraging by the *Toronto Globe,* inasmuch as an increase of births is reported over the preceding year. The increase, however, is not great and still leaves the ratio lower than that of almost any other region of equal extent, viz., 19.9 per 1000, and less than that of 1898. It is to be presumed that vital statistics are kept more carefully in Canada than in some portions of the United States, but some of the small increase is attributed by the *Globe* to prosecutions of parents for neglecting to register the birth of offspring. Admitting a certain proportion of births not registered, the ratio is not encouraging, and the steady decrease of late years, only interrupted by the slight rise, is still less so. Even in the worst parts of the United States in this respect the birth-rate has not fallen so low as in Ontario. Though there, as elsewhere with a low birth-rate, the death-rate is still lower, the population would seem to be very nearly in a static condition, which from a political point of view is hardly a desirable one. The cause suggested by the Registrar, viz., the preponderance of the rural population, farm life not being conducive to early marriages, does not strike at the root of the matter. It would be better to assume an ideal of living generally above the universal possibilities, and this would apply as well to the town as to the rural population. The absence of a proletariat, while it indicates thrift and comfort, destroys the aggressiveness of a people and is a symptom to a certain extent of national decadence. Ontario seems, as far as this sign is indicative, to be approaching that condition.

OSTEOPLASTIC CARCINOMA.

In 1891 von Recklinghausen directed attention to the development of osseous metastases in primary carcinoma of the prostate gland. He showed that the metastases were associated with the new formation of bone. Since then several additional cases have been reported, and recently Erbslöh described five cases of osteoplastic carcinoma from von Recklinghausen's laboratory.[1] Three cases occurred in men, the primary tumors being prostatic, and two in women, the carcinoma in one being primary in the stomach, in the other in the bile-ducts. In all these cases the carcinoma had a marked tendency to infiltration. The metastatic nodules in the bones contained newly-formed osseous substance. The microscopic appearances indicated that the metastatic growths began in the form of an intracapillary infiltration which resulted in closure of the capillaries and passive congestion, the latter being regarded as the determining cause of the new formation of bone. Side by side with the osteoplastic process may be resorptive processes, which render the bone soft and porous. As far as can be told at the present time, the spinal column is the most frequent seat of this interesting metastasis, then come the ribs, the proximal end of the femur, the pelvis, the skull, the sternum, the humerus, and the radius, in the order named. It seems as if the cells circulating in the blood were arrested in the wide and sluggish capillaries of the bones. The only other metastases in these cases—except in one—were situated in the regional lymph glands. This remarkable peculiarity of certain carcinomas, especially those developing in the prostate gland, should be borne in mind in the clinical study of prostatic tumors.

A TREATY OF SANITARY PROTECTION.

Two South American States, Argentina and Uruguay, have made, what is perhaps a novelty in diplomacy, a treaty of sanitary alliance and protection as regards infectious diseases, especially bubonic plague. It provides for mutual provisions for inspection and quarantine arrangements sufficient to protect either country from invasion of disease from the other without any undue interference with communications or commerce, such as might easily occur were the efforts made independently by either without regard to the actions of the other. Each country is to be in its way the guardian of the other's health as well as of its own, and to cordially co-operate in all necessary measures. The advantages of such a mutual arrangement carried out in good faith are obvious; it would be well could treatises in regard to sanitation become universal. A uniform system of notification and in and out inspection throughout the world, though like every other good thing it might find its opposers, would be a step toward the millenium. At present each leading government keeps its sanitary spies on the others in the way of consuls, etc., and our own government has a corps of medical officers stationed in various parts of the world to supplement its regular consular officials in their lookout for disease that might be transmitted to us. Probably this will always be more or less of a necessity, but such treaties as the one referred to are steps in advance that give encouragement of better things in the future. That it is between two Spanish-American countries is evidence that in medical matters, however it may be in general political management, they are progressive and enlightened. What they do for and between themselves in this direction will undoubtedly aid in the protection of other countries, which in fairness should reciprocate and co-operate in the good work. Sanitary alliances are apparently a new thing in international law; they are unmentioned in most if not all text-books on the subject, but they are an innovation that is to be commended and it is to be hoped has come to stay.

PRACTICE ACTS AND RELIGIOUS LIBERTY.

The argument that medical practice acts interfere with religious liberty guaranteed by the constitution is an old one, but it still seems to be in use. The spiritualists and "Christian Science" people always make the most of it, and it does not appear to relieve the case much for them when, as in the Missouri law just passed by the legislature, they are allowed to practice provided they make no charges for their services. The remuneration is the important feature of the religious liberty of which the law deprives them; their religion, in its essentials, is like that of the sailor who, when in extremity, not knowing how to pray, preach or sing, passed the hat for a collection. The opposition to the ciated with tuberculous pyelitis or pyelonephritis. The urine was acid, usually rich in pus and red blood-cells.

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[1] Virchow's Archiv, 1901, clxii, 20-44.

The cases of pyelitis and pyelonephritis are of exceptional interest because the urine was obtained directly from the kidney, and usually from both kidneys, so that the two sides could be compared. The only two acute cases were secondary to vesical infection with B. coli. Twelve chronic cases were studied and 5 of these were evidently ascending ureteral infections. B. coli was present in 6 cases, B. proteus vulgaris in 3, and a white staphylococcus in 2, one case showing sterile urine. In the cases not due to B. coli, the urine was alkaline and in all a renal calculus of calcium and magnesium phosphates and carbonates was present. This shows in a striking manner the relation between infection and calculus formation. Six cases of tuberculous pyelitis and pyelonephritis were met with, all associated with the tubercle bacillus in pure culture.

These details are given to show the general trend of the results obtained by this interesting work. In the discussion, Dr. Young refers to dissimilarity of the results obtained by him in a similar study in the male. Young has found a much greater number of different bacteria and among them the gonococcus several times. Gonococcus infections of the bladder are more frequent in men than women, owing to the greater severity of gonococcal urethritis in the former. The ease with which the male bladder may be aspirated for cultures offers good opportunities for studying gonococcal and other vesical infections.

As pointed out by Welch, it would be a one-sided view which failed to take into consideration in the etiology of cystitis and pyelitis the non-bacterial factors, because the bacteria found in the urinary infections have ordinarily very limited pathogenic activity. Finally, it may be mentioned that Hunner refers to 3 cases of pelvic stone associated with streptococci.

Enough has been mentioned to indicate that observations are accumulating which will do much to clear up the various unsettled contentions in regard to infections of the urinary tract and to place our therapy on a safe basis.

THE BACHELOR'S DEGREE AND THE MEDICAL COLLEGE.

The question whether the bachelor's degree should be required for admission to professional schools was considered at a conference of educators recently held in Chicago, and was the special topic of an after-dinner speech by Prof. Ira Remsen of Johns Hopkins University. This problem, while seemingly simple, is in reality quite complex. As Professor Remsen said, there is a great difference between B. A. degrees, the difference depending largely on the college from which the degrees are obtained. A bachelor of arts from a really first-class institution has had, it may safely be asserted, a broader and a more complete training than has one who has obtained a similar degree from some ill-equipped school unfortunately dubbed a college and authorized to grant degrees, but which is little more than a high school or seminary.

If a bachelor's degree could have some definite meaning attached to it, by an agreement among the colleges and universities, as to requirements, it could be unhesitatingly accepted as proof of qualification for admission to the medical or other professional school.

There is, however, another point to be considered. With the liberty allowed a student in our first-class institutions, it is possible for a man to graduate without having taken those studies best fitted to enable him to pursue most advantageously his subsequent medical course. A student may have taken, as his elective studies, only French or mathematics, or astronomy, or geology, and yet be graduated *magna cum laude* with the bachelor's degree, and claim a right to enter the medical college. It is clear that he would be better fitted had he devoted some of his time to certain other branches, as biology, chemistry, botany, physics, etc. It follows that the faculty of the medical college has a right to ask those who apply for admission on the B. A. degree not only from what college they come, but what studies have been taken in order to secure the degree.

This leads to a consideration of the important topic of premedical courses in our literary colleges. Should not students who contemplate the study of medicine be early guided into courses especially adapted to prepare them for the medical college, into physics, chemistry, biology, with histologic technique, German and French studies that can be made to have a cultural influence as well as philosophy, Greek, or higher mathematics? And should not the student in a university in which the medical school is a part of that university receive credit in both the literary and the medical departments for certain work? This is already done to a certain extent at not a few universities, so that when a man takes his bachelor's degree in art or science, he has also credits in his medical course for one or even two years' work.

LEGISLATION ON HYPNOTISM.

A bill has been introduced in the New York legislature for regulating the practice of hypnotism, mesmerism, suggestive therapeutics, and allied phenomena. License is required from the Board of Regents of the University, and to obtain it a good general education and at least two years in a medical school are required. Any unauthorized practice or advertising of ability for such is to be made a misdemeanor, and penalties of fine and imprisonment are provided for by the act. In regulating the therapeutic and otherwise employment of hypnotism, New York State will have a precedent in the legislation or local ordinances of several European countries which have prohibited the unauthorized practice of inducing the hypnotic condition. Its possible dangers are sufficiently well known, moreover, to fully justify the proposed measure.

ONTARIO'S VITAL STATISTICS.

The Registrar-General of the Province of Ontario recently published the complete returns of births, marriages and deaths, which are considered encouraging by the *Toronto Globe*, inasmuch as an increase of births is reported over the preceding year. The increase, however, is not great and still leaves the ratio lower than that of almost any other region of equal extent, viz., 19.9 per 1000, and less than that of 1898. It is to be presumed that vital statistics are kept more carefully in Canada than in some portions of the United States, but some of the small increase is attributed by the *Globe* to prosecutions of parents for neglecting to register the birth of offspring. Admitting a certain proportion of births not registered, the ratio is not encouraging, and the steady decrease of late years, only interrupted by the slight rise, is still less so. Even in the worst parts of the United States in this respect the birth-rate has not fallen so low as in Ontario. Though there, as elsewhere with a low birth-rate, the death-rate is still lower, the population would seem to be very nearly in a static condition, which from a political point of view is hardly a desirable one. The cause suggested by the Registrar, viz., the preponderance of the rural population, farm life not being conducive to early marriages, does not strike at the root of the matter. It would be better to assume an ideal of living generally above the universal possibilities, and this would apply as well to the town as to the rural population. The absence of a proletariat, while it indicates thrift and comfort, destroys the aggressiveness of a people and is a symptom to a certain extent of national decadence. Ontario seems, as far as this sign is indicative, to be approaching that condition.

OSTEOPLASTIC CARCINOMA.

In 1891 von Recklinghausen directed attention to the development of osseous metastases in primary carcinoma of the prostate gland. He showed that the metastases were associated with the new formation of bone. Since then several additional cases have been reported, and recently Erbslöh described five cases of osteoplastic carcinoma from von Recklinghausen's laboratory. Three cases occurred in men, the primary tumors being prostatic, and two in women, the carcinoma in one being primary in the stomach, in the other in the bile-ducts. In all these cases the carcinoma had a marked tendency to infiltration. The metastatic nodules in the bones contained newly-formed osseous substance. The microscopic appearances indicated that the metastatic growths began in the form of an intracapillary infiltration which resulted in closure of the capillaries and passive congestion, the latter being regarded as the determining cause of the new formation of bone. Side by side with the osteoplastic process may be resorptive processes, which render the bone soft and porous. As far as can be told at the present time, the spinal column is the most frequent seat of this interesting metastasis, then come the ribs, the proximal end of the femur, the pelvis, the skull, the sternum, the humerus, and the radius, in the order named. It seems as if the cells circulating in the blood were arrested in the wide and sluggish capillaries of the bones. The only other metastases in these cases—except in one—were situated in the regional lymph glands. This remarkable peculiarity of certain carcinomas, especially those developing in the prostate gland, should be borne in mind in the clinical study of prostatic tumors.

A TREATY OF SANITARY PROTECTION.

Two South American States, Argentina and Uruguay, have made, what is perhaps a novelty in diplomacy, a treaty of sanitary alliance and protection as regards infectious diseases, especially bubonic plague. It provides for mutual provisions for inspection and quarantine arrangements sufficient to protect either country from invasion of disease from the other without any undue interference with communications or commerce, such as might easily occur were the efforts made independently by either without regard to the actions of the other. Each country is to be in its way the guardian of the other's health as well as of its own, and to cordially co-operate in all necessary measures. The advantages of such a mutual arrangement carried out in good faith are obvious; it would be well could treatises in regard to sanitation become universal. A uniform system of notification and in and out inspection throughout the world, though like every other good thing it might find its opposers, would be a step toward the millenium. At present each leading government keeps its sanitary spies on the others in the way of consuls, etc., and our own government has a corps of medical officers stationed in various parts of the world to supplement its regular consular officials in their lookout for disease that might be transmitted to us. Probably this will always be more or less of a necessity, but such treaties as the one referred to are steps in advance that give encouragement of better things in the future. That it is between two Spanish-American countries is evidence that in medical matters, however it may be in general political management, they are progressive and enlightened. What they do for and between themselves in this direction will undoubtedly aid in the protection of other countries, which in fairness should reciprocate and co-operate in the good work. Sanitary alliances are apparently a new thing in international law; they are unmentioned in most if not all text-books on the subject, but they are an innovation that is to be commended and it is to be hoped has come to stay.

PRACTICE ACTS AND RELIGIOUS LIBERTY.

The argument that medical practice acts interfere with religious liberty guaranteed by the constitution is an old one, but it still seems to be in use. The spiritualists and "Christian Science" people always make the most of it, and it does not appear to relieve the case much for them when, as in the Missouri law just passed by the legislature, they are allowed to practice provided they make no charges for their services. The remuneration is the important feature of the religious liberty of which the law deprives them; their religion, in its essentials, is like that of the sailor who, when in extremity, not knowing how to pray, preach or sing, passed the hat for a collection. The opposition to the

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1. Virchow's Archiv, 1901, clxii, 20-44.

Missouri bill, however, as well as to a similar act just passed by the Indiana legislature, appears from an unexpected source; it is said that Catholic influence has been exerted against the medical practice act in those states. We have too good an opinion of the general good sense of the higher authorities and leaders in the Catholic or any of the Protestant churches to believe that they are at all responsible for such an action; it must be, if the reports are true, only a misled zeal of some of their more poorly informed adherents. "Christian Science," so far as its misty theology can be interpréted, involves the nullification of human responsibility and thus strikes at the basis of all religion. It is, as has often been said, neither Christian nor scientific, and is therefore without any claims for consideration on either side. Religious rites for the sick, as they are practiced in the Catholic church, are, as is generally understood, for the good of the soul, and therefore do not come properly under the prohibitions of the legal regulation of medical practice. The Catholic church does not teach dependence upon them to the exclusion of other measures, or that they are alone directly efficacious for bodily ills. That Catholics, therefore, should oppose medical laws, is not to be expected, and if they do so it must be attributed to individual ignorance, not to the church as a whole.

HAYCRAFT'S REACTION FOR BILE.

When sublimed sulphur—"flour, or flowers, of sulphur"—is added to urine containing bile, the sulphur immediately falls to the bottom of the tube. In the absence of bile the sulphur remains on the surface of the urine, sinking but partially or very slowly, if at all. This is Haycraft's reaction for biliary acids. This simple method, known to Eichhorst in 1887 and mentioned in the Physiology of Langlois and de Varigny in 1893, seems to have fallen into complete oblivion. The original publication of Haycraft, an English chemist, has been searched for in vain by Frenkel and Cluzet who, attracted by the interesting physical problems involved in the reaction and by its practical value, have studied the phenomenon both clinically and experimentally.[1] They find that Haycraft's reaction for biliary acids is an extremely simple method for determining the presence of bile in the urine and in certain other organic liquids. Its sensitiveness compares favorably with that of Pettenkofer's method and of Strassburg's modification of the latter, but it is not absolutely pathognomonic; for there are a number of other substances which also cause the sulphur to precipitate, such as acetic acid, alcohol, ether, chloroform, essence of turpentine, benzoin and its derivatives, phenol and its derivatives, anilin, and the soaps. In the case of urine, however, Haycraft's method is of great usefulness for the very reason that the substances just enumerated occur but exceptionally in the urine, and hence only rarely will they simulate the presence of the biliary acids. Frenkel and Cluzet state that Gmelin's test and Pettenkofer's and Strassburg's reactions may fail to indicate bile where sulphur gives a positive result. In the case of the contents of the stomach or of the intestines, the reaction with sulphur has not so much value because of the frequent presence of acetic acid, alcohol, and phenol and its derivatives, all of which throw down the sulphur.

Haycraft's reaction is explained by differences in surface tension. The authors have determined that all fluids with a surface tension greater than 50 dynes per centimeter do not allow sulphur to fall, and that in all fluids with a tension less than 50 dynes the sulphur rapidly settles. When the tension is about 50 dynes, the reaction is doubtful. Incidentally they observed that lycopodium bears the same relations to fluids with a tension of 30 dynes, as flowers of sulphur to fluids with a tension of 50.

A THEORY OF RELAPSES IN FEVERS.

In certain disease, such as typhoid fever, antibacterial substances, often in considerable quantity, appear in the blood toward the end of the fever and in convalescence. It is not unlikely that these substances begin to be formed soon after infection. The appearances of other substances, such as agglutinins, indicate that specific changes are taking place in the tissues and fluids of the affected organism. That relapses should occur, as they frequently do, in individuals whose blood contains substances inimical to the specific bacterium of the disease in question is certainly at first sight not clear. This question is discussed by Herbert E. Durham.[1] He bases his theory of relapse in fevers upon the consideration that a given infection is not to be regarded as the result of the action of a number of actually identical organisms, but rather as the result of the combined action of closely similar though not absolutely identical agents. Now, if the infecting agents consist of varieties and subvarieties, then the resulting antibodies in the serum may vary more or less in their general constitution corresponding to the varieties and subvarieties of the micro-organisms at work. The individual may become highly protected against a particular variety of pathogenic agent, whereas other varieties may multiply quite unchecked and thus cause a relapse. Is this refinement of bacterial variability a mere creation of fancy or does it rest upon actual observations? Durham thinks that such varieties as here supposed have been shown to exist. Pfeiffer and Kolle have found that the protective power of typhoid serum varies with different test cultures, and not only quantitatively but also qualitatively. There are also marked differences in the reaction of agglutination in different races of bacilli and different samples of serum. In studying different colonies of B. enteritidis (Gärtner) obtained from a fatal case of meat poisoning, Durham found that the bacilli in one colony were peculiarly aberrant in their behavior toward the serum from some of the individuals who had suffered from the poisoning. And two of the serum samples, which agglutinated the atypical bacillus, had comparatively less effect upon the other cultures. This points to a "varietally different" infection to that of the other patients. The aberrant culture was not more virulent than the other cultures. The problem ought to be studied by means of tests of the actual conditions in relapses in such disease as typhoid fever. Serum should be tested, as suggested by Durham, before, during and after relapses, upon a varied selection of cultures, both for agglutinating and protective powers. The literature of antistreptococcic serum contains much evidence confirmatory of the view advanced by Durham. Van der Velde has shown that the serum of a streptococcus-treated animal contains pronounced protective powers against a particular race of streptococci, but not against other races. Clinical experience shows that erysipelas is very likely to recur, and perhaps the renewed outbreaks are caused by streptococci that differ somewhat in character from the streptococci of the original attack. There is consequently considerable evidence to indicate that relapses may depend upon the varying preponderance of varietal forms, each capable by virtue of its complex structure to cause more or less specific antibodies. There are so many factors in the pathology of an infective disease that it is exceedingly difficult to determine the part of each in the final result. Bacterial variability seems to be competent to clear up some of the difficulties in the way of a clear understanding of relapses in fever.

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[1] Jour. de Phys. et Path. gén., 1901, iii, 99-111.

[1] Jour. of Path. and Bact., 1901, vii, 241-249.

Medical News.

ALABAMA.

West Huntsville has closed its smallpox hospital, as no new cases have developed in the last three weeks.

Dr. Thomas W. Ayers, wife and family left Anniston, March 9, and sailed from San Francisco, March 15, for China, where Dr. Ayers is to be stationed as a medical missionary.

Two Birmingham physicians have been fined $1 each for violating the city ordinance by failing to notify the city physician and county health officer, at once, on finding a case of contagious disease.

Hillman Hospital, Birmingham, received an addition of more than $6000 to its building fund in response to appeals made at a recent mass meeting. The assets of the hospital now exceed $31,000, not including a maintenance fund of $20,000, presented by Mr. Hillman.

CALIFORNIA.

A detention hospital for contagious diseases is said to be the most pressing need of Los Angeles, and the board of health has been petitioned to take steps to establish such an institution.

A "nervopathist," of Los Angeles, who was fined $100 a short time ago for practicing medicine without a license, and who appealed, has had the judgment of the lower court affirmed by the supreme court.

A leper, who had been selling candy in San Francisco since November, was taken from his place of business March 12 and admitted to the Harbor Hospital, whence he will be taken to the hospital for lepers.

The German Hospital, San Francisco, has invited architects to present competitive designs for the new hospital building, on which $250,000 is to be expended. Prizes of $2000, $1000, $750 and $500, respectively, are offered for the four best designs.

Seven graduates of the Pacific Coast Regular College of Medicine, comprising the first graduating class of that institution, which began its work only about nine months ago, have been refused licenses to practice by the board of medical examiners of the Medical Society of the State of California, on the ground that their Alma Mater does not meet with the minimum requirements for medical colleges, as adopted by the board Dec. 4, 1900.

COLORADO.

Dr. Uhler D. McDowell, Longmont, has been appointed medical inspector to the State Board of Health.

Lake City is to have a hospital, through the generosity of Col. C. F. Meek, who has purchased a suitable building and turned it over to the people of Hinsdale County for hospital purposes.

A compromise has been effected regarding the Denver & Rio Grande Railroad Hospital at Salida which is satisfactory alike to the officials and the employees of the railroad. By its provisions Dr. Frank N. Cochems is made surgeon-in-charge, with authority only limited by the trustees of the employees relief association.

An antivaccination circular is being distributed by the Colorado Medical Liberty League, signed by two "doctors," one of whom is a magnetic healer and the other is not known to the medical directory. Unfortunately, however, this propaganda makes the enforcement of the orders of the health commissioner regarding vaccination more difficult.

ILLINOIS.

St. Anthony's Hospital, Rock Island, held the annual meeting of its surgical staff, March 8, and re-elected Dr. George L. Eyster, president; Dr. Joseph R. Hollowbush, vice-president, and Dr. St. Elmo M. Sala, secretary and treasurer.

Chicago.

Dr. E. C. Dudley is taking a vacation tour on the Pacific coast.

Dr. Frank Billings has returned from a yachting trip of a month in the tropics.

"Dr." Gee Wo Chan, a Chinaman, has been prosecuted by the State Board of Health for omitting to comply with the formalities required by law before practicing medicine.

Dr. Gerry S. Driver, acting asst.-surgeon, U. S. Army, who has been stationed at Chicago for some time, has been made captain and asst.-surgeon of Volunteers, and ordered to the Philippine Islands.

Pneumonia Mortality.—The enormous increase of pneumonia mortality within the past decade is due to the fatal complications of influenza, the germ of which disease has been present in this city to a greater or lesser extent ever since 1890. The sufferer from pneumonia now has a much poorer chance of recovery than he would have had a dozen years ago, when there was no influenza infection in the air.

Chicago's Mortality.—The mortality last week was lower than for the week previous, and restores the average of eight weeks of unprecedentedly low winter mortality. There were 443 deaths from all causes, 35 fewer than the previous week and 104 less than the corresponding week of 1900. The death-rate was 13.14 per 1000 per annum for the week ended March 16. Of the 443 deaths, 104 were of infants under 1 year old and 88 of individuals over 60. Respiratory diseases caused 167 deaths and violence 24. On the basis of the first sixteen days of the month, the total March mortality will be only 1910, as against 2547 in 1900, 2343 in 1899, and 2316 in 1898. Taking the increase of population into consideration, this will make a remarkable showing for March, 1901. The most satisfactory and the most unlooked-for decrease is in the deaths from pneumonia, which were 13 less than the previous week and 48 fewer than in the corresponding week one year ago. The total pneumonia deaths for the month, up to the close of last week, number 161, on which basis the total for the month would be 328, as against 564 in 1900, 468 in 1899, and 378 in 1898.

INDIANA.

Riley has an epidemic of measles. One physician in the town reported 83 cases to the County Board of Health in February.

Dr. John A. Martin, for several years asst.-surgeon at the State Soldiers' Home, Lafayette, has been made surgeon-in-charge, vice Dr. Theodore Sargent, who resigned on account of ill health, but who will remain at the home as assistant-surgeon.

IOWA.

Cedar Rapids is to have a public hospital. Abraham Slimmer, of Waverly, has agreed to duplicate, up to $50,000, any amount the city may raise for this purpose. About $25,000 has been secured up to this time.

LOUISIANA.

Dr. Joseph A. O'Hara, New Orleans, has been appointed medical inspector of public school children by the local board of health.

Dr. D. U. Maes has been appointed assistant-demonstrator of anatomy, New Orleans College of Dentistry, vice Dr. Emil Regard, resigned.

The annex to the State Insane Hospital, for colored patients, has been constructed at a cost of $18,000, and on the day it was opened fifteen patients were received.

The State Board of Health has appointed Drs. David P Albers, William H. Carson, W. S. Cushman, J. E. Heidingsfelder, G. King Logan, and W. J. Rhymes medical inspectors on the fruit vessels plying between New Orleans and Central American ports.

Appointments as Internes.—On competitive examination, the following undergraduates of the medical department of Tulane University have been chosen to serve as internes in the Charity Hospital for two years from April 1: W. R. Callen, P. C. De Verges, A. C. Eustis, E. M. Hummel, A. C. Jacoby, R. C. Lynch, J. F. Points, and S. K. Simon.

Tuberculosis Camps.—There is a movement on foot to establish hospital camps for the tuberculous in the pine woods near Covington, St. Taminary Parish. Already a fifty-acre tract of land and $800 have been donated for the purpose, $300 of the latter having been given by members of the State Board of Health.

MARYLAND.

Smallpox.—Early in March a report came to the State Board of Health of the prevalence of an outbreak of supposed chicken-pox in Sussex County, Delaware, which borders on Maryland. A case was found on board a vessel in the harbor of Cambridge, Md., which was diagnosed by Drs. Mace and Goldsborough, of that place, as smallpox. Dr. John S. Fulton at once warned all county health officers of the Eastern shore, and also notified the Delaware officials of the discovery. It was then found that there were fifty or sixty cases, chiefly among negroes, at Seaford, Del. The disease is said to be of a mild type.

Baltimore.

Dr. Bosley, health commissioner, has had introduced into the city council an ordinance appropriating $25,000 for an infectious diseases hospital.

MICHIGAN.

Smallpox in Flint has assumed alarming proportions. Many cases have been reported, more than 100 are in quarantine, and this within ten days. All business is at a standstill.

Dr. Henry D. Thomason, Albion, who served during the Spanish-American War as major and surgeon of Volunteers in the South, Cuba and the Philippines, and returned to the United States a few months ago, has been re-appointed major and surgeon, U. S. V., and is on his way to his post of duty in Manila.

The State Mortality.—For February this was at the rate of 17.1 per 1000 per annum. There were 472 more deaths than in the corresponding month of 1900. There were 536 deaths of infants under 1 year of age, 185 of children 1 to 4 years old, and 1029 of persons 65 years and over. Important causes of death were as follows: Tuberculosis, 184; typhoid fever, 43; diphtheria and croup, 47; scarlet fever, 34; pneumonia, 474; influenza, 378; cancer, 121; violence, 100.

Hospital for Consumptives.—A bill has been introduced in the legislature, by Dr. Ames, to establish and maintain a state hospital for consumptives. It provides that the objects of the hospital shall be the proper care and treatment of consumptives; the training and education of those who leave the hospital in the restriction of the spread of the disease; the training of medical students in the methods of restricting tuberculous disease, and that physicians and others may be enabled to study the disease with a view to its restriction or extinction in Michigan.

MINNESOTA.

Bethesda Hospital, St. Paul, has paid off $20,000 of its indebtedness, leaving only $5000 outstanding.

Both medical bills, previously noticed in these columns, were defeated in the legislature, after long and fruitless debate, by a vote striking out the enacting clause of each.

A bill has been introduced by which the state hospitals for the insane are to be designated, not as "first" and "second," but by the name of the city in which *they are located. The* bill also provides for $200.000 to be used for the construction of two cottages at Anoka and two at Hastings.

NEW JERSEY.

Many physicians from various parts of the state gathered at Trenton to urge the appropriation of funds for the construction of a sanitorium for consumptives.

The State Hospital at Morristown is at last completed, at a cost of $500,000, or more than $5000 per bed. The formal opening will be deferred until later in the spring.

Smallpox has appeared in Hudson County, and at Mount Laurel. General vaccination has been recommended in the latter place, and in Paterson. The quarantine has been raised against certain districts of Woodbury, where smallpox has prevailed.

Regulation of Anatomy Courses.—A bill has been introduced in the house prohibiting any institution that gives instruction in human anatomy from graduating pupils in less than two years. It was referred to a committee and promptly reported with a favorable recommendation for its passage. The bill is aimed at a school in Trenton which advertises to teach its system of curing without drugs in ten months. Because it does not prescribe drugs in any way the school is exempt from examination by the State Board of Medical Examiners.

NEW YORK.

Dr. Ethan A. Nevin, Ogdensburg, has been appoinfed junior physician at the Long Island State Hospital.

The Amsterdam City Hospital staff met March 5 and elected Dr. Charles Storer consulting physician. Dr. James B. Conant was nominated on the staff, and Dr. Edward J. Collier appointed pathologist.

The bill giving the State Board of Health power to regulate the type and leading of books, newspapers and serial literature, to protect the public eyesight, has been reported favorably by the public health committee of the assembly.

Medical Examiners.—The following were appointed by the board of regents, at its meeting in Albany, March 14: Drs. Joseph P. Creveling, Auburn, and Eugene Beach, Gloversville; Drs. W. Gilman Thompson, Cornell Medical School, and Willis G. Tucker, Albany Medical School, were appointed members of the medical council for three and five years, respectively.

Buffalo.

Dr. Charles M. Burdick has been appointed medical interne in the St. Lawrence State Hospital.

The monthly report of the department of health for February shows a death-rate of 13.43 per 1000 per annum.

New York City.

A New Hospital.—The Hebrew Benevolent and Orphan Asylum Society will build a five-story hospital at the northeast corner of Amsterdam avenue and 136th street. It will adjoin the present building and will cost $70.000.

A Brooklyn policeman, exposed as a guard in a tenement district where quite a number of smallpox cases had appeared, has been sent to North Brother Island suffering from the disease. Other cases have appeared in Brooklyn.

A Projected Nurses' Home.—On March 11 plans were filed for the new nurses' home for the Presbyterian Hospital, to occupy a plot 124 by 102 feet on a site opposite the hospital. The structure is to be eight stories, paid for from a fund of $300,000 provided by the munificence of John Stewart Kennedy, president of the board of managers.

OHIO.

Dr. Homer C. Bennett, Lima, suffered a loss of about $1000 by fire, March 12.

Township physicians have been appointed as follows: Drs. Edward A. Flinn, Madisonville, and Ulysses G. Senour, Pleasant Ridge.

Dr. James F. Edwards, formerly of Portsmouth, but now an acting assistant-surgeon on duty with the 32d Regiment, U. S. V., in the Philippines, has been commended for conspicuous gallantry on the field of battle and recommended for promotion.

Lakeside Hospital, Cleveland, has selected the following house staff from the graduating class of Western Reserve Medical College: A. H. Bill and C. B. Wean, medical service; P. P. Carlisle, C. H. Hay, A. C. Ludlow and L. B. Zintsmaster, surgical; C. S. Hoover and D. W. Pepper, gynecology, and E. M. Ickles, private ward.

Meat Regulation.—Health Officer C. W. Davis, Cincinnati, has transmitted to the board of public service an ordinance providing that no person shall expose for sale any sheep, goat, lamb or kid that has been slaughtered, until the head, feet, etc., have been removed. The statement is made that meat from which the head, feet, etc., are not removed is liable to contain "germs and vermin."

St. Joseph's Hospital, Lorain, has organized its medical staff as follows: Dr. Abraham N. Garver, president; Dr. Olney B. Monosmith, secretary; Drs. William E. Wheatley, Samuel S. Cox, John F. McGarvey and Abraham N. Garver, on the surgical staff; Drs. Edward V. Hug, Charles H. Frederick, Frank Young, John R. Gilbert and H. P. Robinson, on the medical staff, and Drs. Olney B. Monosmith, Lorain, and H. Wooster Patrick, Elyria, in the eye, ear, nose and throat department.

PENNSYLVANIA.

Dr. J. Ralph Shook, Greencastle, has received an appointment as acting assistant-surgeon *in the army*.

Dr. Andrew Strang, for many years resident physician at Hillside Home, Scranton, has resigned and will spend several months abroad.

The State Hospital for the Insane at Norristown is so overcrowded, despite the two new buildings, that on March 1 260 patients were sleeping in corridors, 150 of whom had only mattresses on the floor.

The legislature has been asked for an appropriation of $60,000 for the establishment of free homes for consumptives in the mountains near White Haven. The idea at present is to erect about ten cottages where these patients may be treated.

The will of Christopher L. Magee, of Pittsburg, provides for the founding of a general hospital, to be known as the Steel-Magee Hospital, in honor of the testator's mother. The interest on $10,000 was also given to Mercy Hospital, of Pittsburg.

Fire in Hospital.—On March 11 a fire occurred in the Beaver County Hospital, at Rochester, and destroyed the first floor of the building. The hospital was completed last July, at a cost of $4000. The total loss will aggregate $3000. The patients were transferred to the Beaver Valley Hospital at New Brighton.

Warrants have been issued by Coroner Roberts, of Scranton, for the arrest of four "Christian Scientists" for alleged criminal negligence in the case of a man who recently died there while under their treatment. One of the accused is said to have received $1 a day for his services, and as he has no license to practice medicine, may be prosecuted.

Philadelphia.

Gifts.—By the will of George M. Troutman, $5000 has been given the *Presbyterian Hospital* for the endowment of a free bed; $1000 to the Maternity Hospital of Philadelphia, $1000 to the Northern Dispensary of Philadelphia, and $5000 to the Philadelphia Home for Incurables.

Hospital Funds.—The recent charity ball realized $11,200, which was equally divided between the University of Pennsylvania Hospital, the Maternity Hospital of the Jefferson Medical College, the Orthopedic Hospital and Infirmary for Nervous Diseases, and the Samaritan Hospital.

Free Hospital for Poor Consumptives.—This institution has announced that the total receipts for the year were $10,237.65, and the expenditures $10,048.27. The sum of $3327.14 was received through small contribution boxes placed in different portions of the city. The board of managers has purchased 215 acres of land in the Pocono Mountains, on which to erect a sanitarium. At the present time the patients are being treated in the University, German, St. Agnes', Rush and St. Mary's hospitals. It is hoped that the management will soon be able to erect a building of its own in the city. Dr. Lawrence F. Flick was re-elected president.

Tuberculosis Contagious.—The board of health has placed tuberculosis on the list of contagious diseases, and decreed that physicians treating such cases must report them. It is *not* the intention to isolate cases of tuberculosis, or to placard their houses. The work of the board will be educational, and will consist in sending to these patients instructions regarding certain precautionary measures to be instituted in order to prevent others from contracting the disease, and in other instances to supply patients dependent on charity with the required medicines. This work, for the most part, has resulted from the efforts of members of the Pennsylvania Society for the Prevention of Tuberculosis and the Philadelphia County Medical Society.

SOUTH DAKOTA.

Dr. Frederick W. Cox, Vermillion, has been appointed acting assistant-surgeon in the army.

The plans and specifications for St. Luke's Hospital building, Aberdeen, have been received and the construction of the hospital will be started in a few weeks.

The bill introduced by Dr. Charles W. Locke, of Minnehaha County, provides that no license shall be issued to any person who has not taken a full four-year course in a recognized medical college.

UTAH.

Smallpox is reported as follows: Salt Lake City, 112 cases, including 56 new cases; Sterling, 1; Eureka and Letitia, each 2 cases.

Dr. Joseph M. Heller, Winchester, late acting assistant surgeon in the army, has been appointed major and surgeon of volunteers, *on the recommendation* of General Otis.

Gunnison children were admitted to school unvaccinated in violation of orders of the State Board of Health, and the health officer, Dr. Hubert F. Andrews, has been instructed to prosecute the persons on whom the responsibility can be fixed.

CANADA.

Montreal's mortality record for the nine weeks following January 5 shows 129 deaths from scarlet fever. During the same time diphtheria only claimed 13.

Smallpox cases now number 136 in the province of Ontario. On March 1 there were 87. The number of cases at Sudbury has increased from 17 to 30.

Dr. Walter Wilkins, one of the resident staff of the Montreal General Hospital, has left for British Columbia, to accept an appointment as surgeon of the Cariboo mines.

An epidemic of scarlet fever is raging in the Baptist college at Woodstock, Ont. There are several hundred students at this institution, and the college is under strict quarantine.

Prof. J. George Adami, of McGill University, Montreal, has been appointed vice-president of the section of pathology and bacteriology of the International Congress on Tuberculosis, to be held in London, England, in July, under the patronage of His Majesty, King Edward VII.

Sanitary Legislation.—A deputation from the National Sanitarium Association waited on the local government recently, seeking an amendment to the sanitarium act, which will allow municipalities to contribute to the support of sanitaria outside the municipalities. If the act were so amended the association would immediately commence the erection of a sanitarium outside of Toronto.

Registration of Births and Deaths Opposed.—The Doukhobors and Gallicians, settled in the Northwest Territories, are commencing to make trouble in the community. They first objected to Canadian marriage laws, and now they are opposing the law in regard to the registration of births and deaths. They have issued "An Address to All Nations," seeking an asylum in a country where these "oppressive laws" do not obtain.

Victorian Order of Nurses.—The annual meeting of the Victorian Order of Nurses was held at Ottawa on March 15. The total receipts for the year amounted to $7638.53, and the expenditure was $5668.76. The Ontario government grants amounted to $2500. Six new branches were supplied with nurses during the year. Since the inauguration of the order, five cottage hospitals have been established in British Columbia and the Northwest Territories. A fund will be established for creating such hospitals, and it is proposed to invite the dominion and provincial governments for contributions for this purpose.

Dominion Medical Council.—On the 13th inst., Dr. T. G. Roddick, M.P., introduced his bill for a dominion medical council into the dominion parliament. In his address to the house, he explained the provisions of the bill, the details of which have already been published in The Journal. In going over the constitution of the board, Dr. Roddick gave a concise history of the repeated attempts to form this council. Each province will be given three members and the homeopaths will also have three representatives. Dr. Roddick gives the medical population of the provinces as follows: Prince Edward Island, 90 practitioners; Nova Scotia, 476; New Brunswick, 243; Quebec, 1400; Ontario, 2500; Manitoba, 344; British Columbia, 314; Northwest Territories, 95. The bill received its first reading.

Scientific Evenings.—Toronto University has inaugurated an *annual series of scientific evenings*, to afford the public an opportunity to become acquainted with the scientific resources of the university. In the physiological department, Prof. A. B. MacCallum and Dr. F. H. Scott exhibited the tracings from the external pulsations of the heart and blood-vessels of the human subject at the session held March 13. Dr. Miller and Dr. Kendrick, of the chemical department, showed experiments illustrating Goldschmidt's method of producing intense heat by the action of aluminum on oxid of iron. Prof. A. Primrose and Dr. Coutts gave a demonstration of the filaria parasite. One was exhibited in the living state, the filaria sanguinis hominis nocturna. Demonstrations were also given in the laboratories on radiographic experiments, microtomy and bacteriology.

Healthy Baking-Powder.—A deputation of the baking-powder men waited on the central government last week. They were accompanied by Dr. Peter T. Austin, a New York chemist, while the Inland Revenue Department was advised by its analysts, Messrs. T. MacFarlane and A. McGill. In a bulletin issued some months ago, noted in The Journal at the time, the employment of alum in baking-powders was condemned as being injurious to health. The contentions of the deputation were that whenever alum is used in making baking-powder it is mixed with bicarbonate of soda and, during the process of baking, goes off in the form of carbonic acid gas, and the residue left is not injurious to health. While a prohibitory law might be justified in England, where they employ a crude alum, it does not maintain in Canada, where the product goes into the manufacture. The deputation was promised a consideration of the question.

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Death of the Editor of "Vratch."—Prof. V. Manassein, who founded the leading Russian medical weekly, *Vratch*, twenty-one years ago, and has been its editor since, died at St. Petersburg, February 26, of apoplexy. He was in his sixty-first year. He served as professor of therapeutics and internal medicine for twenty-five years, and has published a number of important works.

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LONDON.

The Royal Commission on Arsenical Poisoning.

Under the presidency of Lord Kelvin, the royal commission appointed to investigate the amount of recent exceptional sickness and death due to arsenical poisoning, the extent to which this was due to the presence of arsenic in beer or other articles of food or drinks, and how such poisoning can be prevented in the future, has commenced its sittings in London. Most of the evidence given up to the present has been previously reported in The Journal. Dr. Tattersall, medical officer of health of Salford, an important town with a population of 222,000, near Manchester, described the outbreak there. The facts are exactly parallel to those of the Manchester outbreak. In June, 1900, a great increase was observed in the number of cases of peripheral neuritis, and in November a still further increase. All the sufferers were beer drinkers and took from 1 to 16 pints of beer daily. Lead poisoning was suspected, but analysis of samples of beer taken from fourteen breweries were negative. Dr. Reynolds' discovery of arsenic in the beer of Manchester revealed the cause of the peripheral neuritis; 996 cases were reported, and there were 107 deaths, probably due to arsenical poisoning. The outbreak lasted from June to the end of November. Moderate drinkers took about half a grain of arsenic weekly; in some cases as much as 4 grains was taken.

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This case presents some of the characteristics which have been described in the few instances of the disorder on record. But it is remarkable in the slightness of the pain. In most cases paroxysmal pains lasting several hours were a characteristic feature. When washed and dried in the air the gritty material passed with the motions had the appearance of fine sand. It was deep brown, with an admixture of pale particles. Under a low power of the microscope the granules were seen to be of a great variety of shapes; some were roughly oval, some oblong or rod-like, others irregular. Their color varied from yellow to brown. The air-dried sand was composed of water, 12.4; organic matter, 26.2, and inorganic, 61.3 per cent. Analysis showed that the inorganic matter was composed of CaO 54.9, P_2O_5 42.5, CO_2 2.2, and traces of Mg. and Fe.

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Correspondence.

The Physician and Commercialism.

Chicago, March 1, 1901.

To the Editor:—The recent commendable action of the Chicago Medical Society (The Journal, February 2, p. 331) in so emphatically taking a stand against the much discussed division of specialist's fees, is to be, the writer trusts, only the first move toward a more thorough and rigid ethical introspection. For it is only by such decisive action that every member of the profession can be made to appreciate how insidious and dangerous has been the progress of commercialism in medicine.

Recent stock in a mineral springs company has been offered to—and, indeed, purchased by—some of our leading physicians at a very advantageous price. It being explained to the physician visited, by the solicitor for the company, that the water is practically pure—there is no doubt the spring furnishes good water—that he can without hesitation recommend it to his patients, that the sale of the water is to depend upon physicians' and druggists' recommendations entirely, there being a definite profit on every gallon sold, he (the physician) can by each and every prescription increase the earnings on the stock he holds; indeed, from a businessman's standpoint the proposition is a very attractive one, and it is being conducted upon such conservative lines that very few physicians who have subscribed for stock realize how questionable is the transaction from the ethical standpoint. To all questions there are two sides, and this is not an exception. Wherever pure water is difficult to obtain it can be seen that the patient would be better served by physicians combining, and, if necessary, purchasing a pure spring and recommending its waters, but in such a case it would be a satisfaction to the physician to explain to his patients his connection with the company and his reasons for such connection; the patient's confidence in the physician would thus be strengthened and not weakened, and the medical adviser would thus guard his patient from possible water-supply impositions and be in no danger of embarrassments consequent upon an unexpected disclosure to the patient of his (the physician's) connection with a water company whose products he had been so earnest in recommending. Should physicians then, as household consultants, take a financial interest in any drug, mineral spring, instrument, appliance, or institution, when such an interest might in any way prostitute our best judgment? Why not remember our patient's rights? He looks to us for untrammeled judgment; has he not then a right to expect that we receive no further financial return than what we charge him for our services? If it becomes necessary for physicians to take a financial interest in a water or in any other supply company, to insure better service, let them combine and control such supply, that they may be able to dictate absolutely the policy of such a company, and not be, as in the cases cited, merely nominal stockholders. The public and clientage would thus, through the printed matter of such an organization, be informed as to who are actual owners, and participants in the profits of such a company.

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Diabetes Mellitus in Hebrews.

Philadelphia, March 3, 1901.

To the Editor:—In your editorial[1] on "Diabetes Mellitus" you mention Dr. von Noorden's communication on this subject, and with regard to etiology, special emphasis is given to the predisposition of the Jews to diabetes. I certainly can not agree with this view, at least not to the full extent of the general opinion. It is true, Jews are proportionately more disposed to diabetes than other people, but this fact has nothing to do with the race of Jews, and by the suggestion of the widespread prevalence of diabetes their dissemination and admixture with Indo-Germanic blood is placed on a wrong premise.

It is a well-known fact that nervousness, overstrain, overwork and cares are factors in the etiology of diabetes. If we look on the statistics of diabetes, we find that merchants, bankers, etc., furnish the greater number of diabetics. If we consider this fact, we need not wonder that the Jewish race furnishes a relatively larger proporton of sufferers from this affection. Several years ago Dr. Krämer, of Frankfort-on-the-Main, published statistics of the City of Frankfort in regard to diabetes, and he came to the same conclusion to which Dr. von Noorden, of the same city, comes. No one conversant with the conditions of Frankfort can help knowing that this city quite particularly has a large population of Jewish merchants, bankers and businessmen in general, perhaps in a much greater proportion than any other city. At that time Dr. Ruff, of Carlsbad, Bohemia, the Mecca of diabetics, rejected the statistics of Dr. Krämer and on the basis of the number and occupation of the visitors to Carlsbad. Dr. Ruff states that the lists of the Carlsbad visitors are not in agreement with Dr. Krämer, and no doubt neither with Dr. von Noorden. Dr. Ruff mentions that even most of the women diabetics who come to Carlsbad are business women, who are burdened with the occupations which as a rule are rather consigned to men.

I do not know whether this discussion between Dr. Krämer and Dr. Ruff ever appeared in a medical journal, as at that time it appeared in the *Allgemeine Zeitung des Judenthums* (1895 or 1896). Yours respectfully,

Albert Bernheim, M.D.

"The Technique of Bloodless Work."

New York City, March 16, 1901.

To the Editor:—My attention has been called to a letter from Dr. J. N. McCormack, in The Journal for March 2, commenting on my article on bloodless work, in The Journal for February 9.

Dr. McCormack boils over with righteous wrath, and so far forgets the amenities of warfare—which prohibit cruel or unusual punishments—as to call me, by implication, a "Christian Scientist." The connection seems a trifle obscure. But I suppose he cast about in his mind for the worst name he could think of, and just naturally hit on that one.

As a matter of fact, there was no personal animus whatever back of my article, in which the treatment of Governor Goebel was mentioned. The journals, medical and lay, which touched by the action of aluminum on oxid of iron. Prof. A. Primrose and Dr. Coutts gave a demonstration of the filaria parasite. One was exhibited in the living state, the filaria sanguinis hominis nocturna. Demonstrations were also given in the laboratories on radiographic experiments, microtomy and bacteriology.

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Chicago, March 1, 1901.

To the Editor:—The recent commendable action of the Chicago Medical Society (The Journal, February 2, p. 331) in so emphatically taking a stand against the much discussed division of specialist's fees, is to be, the writer trusts, only the first move toward a more thorough and rigid ethical introspection. For it is only by such decisive action that every member of the profession can be made to appreciate how insidious and dangerous has been the progress of commercialism in medicine.

Recent stock in a mineral springs company has been offered to—and, indeed, purchased by—some of our leading physicians at a very advantageous price. It being explained to the physician visited, by the solicitor for the company, that the water is practically pure—there is no doubt the spring furnishes good water—that he can without hesitation recommend it to his patients, that the sale of the water is to depend upon physicians' and druggists' recommendations entirely, there being a definite profit on every gallon sold, he (the physician) can by each and every prescription increase the earnings on the stock he holds; indeed, from a businessman's standpoint the proposition is a very attractive one, and it is being conducted upon such conservative lines that very few physicians who have subscribed for stock realize how questionable is the transaction from the ethical standpoint. To all questions there are two sides, and this is not an exception. Wherever pure water is difficult to obtain it can be seen that the patient would be better served by physicians combining, and, if necessary, purchasing a pure spring and recommending its waters, but in such a case it would be a satisfaction to the physician to explain to his patients his connection with the company and his reasons for such connection; the patient's confidence in the physician would thus be strengthened and not weakened, and the medical adviser would thus guard his patient from possible water-supply impositions and be in no danger of embarrassments consequent upon an unexpected disclosure to the patient of his (the physician's) connection with a water company whose products he had been so earnest in recommending. Should physicians then, as household consultants, take a financial interest in any drug, mineral spring, instrument, appliance, or institution, when such an interest might in any way prostitute our best judgment? Why not remember our patient's rights? He looks to us for untrammeled judgment; has he not then a right to expect that we receive no further financial return than what we charge him for our services? If it becomes necessary for physicians to take a financial interest in a water or in any other supply company, to insure better service, let them combine and control such supply, that they may be able to dictate absolutely the policy of such a company, and not be, as in the cases cited, merely nominal stockholders. The public and clientage would thus, through the printed matter of such an organization, be informed as to who are actual owners, and participants in the profits of such a company.

* * *

Diabetes Mellitus in Hebrews.

Philadelphia, March 3, 1901.

To the Editor:—In your editorial[1] on "Diabetes Mellitus" you mention Dr. von Noorden's communication on this subject, and with regard to etiology, special emphasis is given to the predisposition of the Jews to diabetes. I certainly can not agree with this view, at least not to the full extent of the general opinion. It is true, Jews are proportionately more disposed to diabetes than other people, but this fact has nothing to do with the race of Jews, and by the suggestion of the widespread prevalence of diabetes their dissemination and admixture with Indo-Germanic blood is placed on a wrong premise.

It is a well-known fact that nervousness, overstrain, overwork and cares are factors in the etiology of diabetes. If we look on the statistics of diabetes, we find that merchants, bankers, etc., furnish the greater number of diabetics. If we consider this fact, we need not wonder that the Jewish race furnishes a relatively larger proporton of sufferers from this affection. Several years ago Dr. Krämer, of Frankfort-on-the-Main, published statistics of the City of Frankfort in regard to diabetes, and he came to the same conclusion to which Dr. von Noorden, of the same city, comes. No one conversant with the conditions of Frankfort can help knowing that this city quite particularly has a large population of Jewish merchants, bankers and businessmen in general, perhaps in a much greater proportion than any other city. At that time Dr. Ruff, of Carlsbad, Bohemia, the Mecca of diabetics, rejected the statistics of Dr. Krämer and on the basis of the number and occupation of the visitors to Carlsbad. Dr. Ruff states that the lists of the Carlsbad visitors are not in agreement with Dr. Krämer, and no doubt neither with Dr. von Noorden. Dr. Ruff mentions that even most of the women diabetics who come to Carlsbad are business women, who are burdened with the occupations which as a rule are rather consigned to men.

I do not know whether this discussion between Dr. Krämer and Dr. Ruff ever appeared in a medical journal, as at that time it appeared in the *Allgemeine Zeitung des Judenthums* (1895 or 1896). Yours respectfully,

Albert Bernheim, M.D.

"The Technique of Bloodless Work."

New York City, March 16, 1901.

To the Editor:—My attention has been called to a letter from Dr. J. N. McCormack, in The Journal for March 2, commenting on my article on bloodless work, in The Journal for February 9.

Dr. McCormack boils over with righteous wrath, and so far forgets the amenities of warfare—which prohibit cruel or unusual punishments—as to call me, by implication, a "Christian Scientist." The connection seems a trifle obscure. But I suppose he cast about in his mind for the worst name he could think of, and just naturally hit on that one.

As a matter of fact, there was no personal animus whatever back of my article, in which the treatment of Governor Goebel was mentioned. The journals, medical and lay, which touched upon the matter in a paragraph or so, stated that he had been bled to control inward bleeding; but the physician's name did not appear. Consequently I had no means of inquiring directly. I presume that there are many other doctors besides myself who supposed the statements true, as they went uncontradicted.

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[1] Journal A. M. A., March 2.

So much in explanation, and I am taking the first occasion after seeing Dr. McCormack's letter to withdraw my statement which, though not wilfully, has done him such injustice. Indeed, the actual treatment as he explains it could not be improved upon. It was wise and followed the most modern surgical standards. The use of hot, intravenous saline infusion so promptly was exactly the right thing done at the right time. I can but express surprise at a report becoming spread abroad, therefore, so at absolute variance with the facts as that which reached physicians here.

Dr. McCormack may rest assured that when I reprint my article for distribution, the Goebel reference will be wholly omitted; and I beg once more to assure him of my regrets.

Respectfully, Robert H. M. Dawbarn, M.D.

Arsenic in Pernicious Anemia and Leucocythemia.

Baltimore, Md., March 18, 1901.

To the Editor:—In The Journal of March 16, page 756, the following words appear—a part of a summary of some remarks by me before the Johns Hopkins Hospital Medical Society: "He has been astonished to hear the value of arsenic in pernicious anemia and leucocythemia questioned recently by a distinguished Boston clinician. There is positive evidence of its usefulness in these conditions."

I regret to say that this report of my remarks is somewhat erroneous. I referred, in an informal discussion, to Dr. Cabot's interesting remarks before the Association of American Physicians, last summer (Pernicious Anemia: A Study of 110 Cases. Transactions of the Association of American Physicians, 1900, xv, 334), and did express surprise that the author should regard arsenic of so little value in these cases, stating that it was my impression that in some instances it was of material benefit. I was far from stating, nor do I believe that the value of arsenic is by any means *positively proven.* And I am not aware that Dr. Cabot has questioned the value of arsenic in leukemia. Yours sincerely, W. S. Thayer, M. D.

The Determination of Sex.

Canton, Ohio, March, 9, 1901.

To the Editor:—Since you have considered it of sufficient importance to give editorial space to an article on the above subject, it may be of interest to know of a case where, for extrauterine pregnancy, it was necessary, in the laparotomy done for relief, to remove the left Fallopian tube and ovary. This woman, with a right ovary intact and a left ovary removed, has since given birth to two children, with an interval of several years between births. The first child was a female, the second a male. One would think that in this day there would be a sufficient number of mono-ovarian women giving birth to children, for one wishing to lay down a scientific theory, based on the hypothesis of ovarian determination of sex, to have led to an investigation of that phase of the subject for facts. Very truly, Edward P. Morrow, M.D.

Medico-Sociologic Data Wanted.

Atlanta, Ga., March 1.

To the Editor:—The sociological committee of the Tri-State Medical Society of Alabama, Georgia, and Tennessee desires information relative to any and all states that have enacted laws regulating marriage of criminals, insane, epileptics, tuberculous or those suffering with venereal disease. It also desires information of any legal enactments or literature on the subject of rendering habitual criminals sterile. Any information along this line, from any of your readers, will be greatly appreciated and gladly received. R. R. Kime, Chairman.

308 and 310 Eng.-Amer. Building.

Book Notices.

The Medical Examination for Life Insurance, and its Associated Clinical Methods, with Chapters on the Insurance of Substandard Lives and Accident Insurance. By Charles Lyman Greene, M.D., St. Paul, Minn., Clinical Professor of Medicine and Physical Diagnosis in the University of Minnesota. With 99 Illustrations. Cloth. Pp. 426. Price $4.00. Philadelphia: P. Blakiston's Son & Co. 1900.

Dr. Greene's treatise on medical examinations for life insurance is by far the most complete work on the subject extant. He states that the reason for the existence of this book is the introduction into medical schools of courses of lectures dealing especially with the medical aspect of life insurance. The work is, however, of equal if not greater value to the medical examiner, who has heretofore had relatively little to guide him, with the exception of the somewhat antiquated treatises up to this time obtainable and the exceedingly brief instructions issued to medical examiners by the respective insurance companies. The most valuable section is that which deals with the conventional questions found on examination blanks, their proper analysis and answers. It is gratifying to note that the author has obtained permission to use and insert the Nylic standard table of heights and weights. The influence of family history in modifying the value of risks is fully considered, as is also the effect of occupation on longevity and the incidence of disease. The section on examination of the chest is very well presented and excellently illustrated. One of the vexed questions that confront the examiner is that of the significance of a pulse which does not vary whether the applicant is sitting or standing, and this question does not seem to be considered by the author. The discussion of the examination of the urine is concise and excellent, but nothing authoritative is stated regarding the important points of the bearing of occasional albuminuria, the so-called physiologic albuminuria, occasional glycosuria, and digestive glycosuria on the value of risks. The author merely quotes, without especial comment, the already-published dicta of certain medical directors regarding these matters. A unique chapter is that on the insurance of substandard lives—a class of risks which nowadays is attracting a great deal of attention among the so-called "old-line" companies. The last two chapters of the volume are devoted to fraud and to accident insurance. The book, taken as a whole, is commendable and marks a great advance in the literature of this important subject.

The Care of the Consumptive. A Consideration of the Scientific Use of Natural Therapeutic Agencies in the Prevention and Cure of Consumption; Together with a Chapter on Colorado as a Resort for Invalids. By Charles Fox Gardiner, M.D., Non-resident Fellow of the New York Academy of Medicine. Cloth. Pp. 182. Price, $1.25. New York and London: G. P. Putnam's Sons. 1900.

The author states that his object is to give in a clear and practical way the rules which should govern the consumptive in the use of fresh air, sunlight, food, rest and exercise, so that these natural beneficial agencies shall be applied to the best advantage. These are, as he maintains, still the best, most convenient and durable of any curative methods applied in the disease. The book is brief in its treatment of the subject, but seems to be amply full for its purpose, while the advice on the whole is excellent. The latter third of the work is given to a description of the climate of Colorado and its advantages, in which it is shown how many consumptives can make their residence there and obtain perfect health. The author believes that the nervous system does not suffer from high altitudes and the typical nervous invalid is not necessarily a contraindication to resort to that section. It is interesting to note how writers of elaborate works on consumption are more conservative than many who merely repeat the prevalent views. This one apparently does not favor the extreme theories of contagion that are held. An impaired vital activity giving the germs, so universally diffused, a chance is, he holds, the more important factor, and he uses as his argument the experience of Colorado Springs, where the danger from contagion should be the greatest, if the views held by many were correct.

The History of Medicine in the United States. A Collection of Facts and Documents Relating to the History of Medical Science in This Country, from the Earliest English Colonization to the Year 1800. With a Supplemental Chapter on the Discovery of Anesthesia. By Francis Randolph Packard, M.D. Illustrated. Cloth. Pp. 542. Price, $4.00 net. Philadelphia and London: J. B. Lippincott Company. 1901.

While there have been many "bits" of medical history published heretofore, some complete as they affected one colony, or one phase, this we believe is the first to appear thoroughly covering all the colonies and all that relates to the subject. The first chapter is general in its character, giving an insight into the conditions existing in the early days when the physician was a combination of preacher and doctor, if not a combination of half a dozen callings. This is the most interesting part of the book, at least to those who love the curious. The author has evidently ransacked every library and searched every book that could possibly throw light on those who founded the profession of medicine in the United States.

Much that is curious, as well as instructive in many ways, is recorded in this part. The following quaint ending to a manuscript on "Receipts to Cure Various Disorders," sent over from London in 1643, by a Dr. Ed. Stafford, is worth quoting: "*Nota bene.* No man can with a good conscience take a fee or a reward before ye partie receive benefit apparent; and then he is not to demand anything but what God shall putt into the head of the partie to give him. And he is not to refuse anything that shall be so given him, for it comes from God. A man is not to neglect that partie, to whom he hath once administered, but to visit him at least once a day, and to medle with no more than he can well attend. In so doing he shall discharge a good conscience before God and man." Certainly this is good advice. But the following notice, which appeared in the *Boston Evening Post and the General Advertiser*, November, 1781, would be more approved to-day: "The physicians of the town of Boston hereby inform the public, that, in consideration of the great fatigue and inevitable injury to their constitution, in the practice of midwifery, as well as the necessary interruption of the other branches of their profession, they shall, for the future, expect that in calls of this kind, the fee be immediately discharged."

Two chapters are taken up with a description of the epidemics which occurred previous to 1800. The sufferings of those early pioneers are graphically described and the sacrifices made by the physicians of that time, as told here, should make the commercially-inclined modern physician blush. Epidemics were common in those days, smallpox especially being often prevalent and generally terribly fatal. The account of the inoculation against this disease, and of the application of vaccination and the excellent results obtained, should be read by those who think they think that vaccination is not one of the greatest discoveries of the ages, and that it has not proved one of the greatest blessings that medical men have given to humanity.

An account of medical education before the formation of medical schools occupies one chapter, and in another is given a history of the early medical colleges. The medical profession in the War for Independence, the earliest hospitals, medical societies and medical legislation in the colonies are among the subjects thoroughly treated. A chapter is devoted to anesthesia, but why we can not imagine. The author has otherwise confined himself to events preceding the opening of the nineteenth century.

Too much praise can not be bestowed on this history of early medical history in this country. The author has not only given us a most complete account of all that pertains to medicine and medical men, but he has put it before the reader in such a manner as to make the reading of it a pleasure. The subjects are so classified and arranged that little is duplicated, something hard to avoid when it is considered that each colony, to a certain extent at least, has to be treated as an entirety. The whole subject is so exhaustively, logically and scientifically treated by Packard that his book will immediately become a standard work on the subject.

A Manual of Medicine. Edited by W. H. Allchin, M.D. (Lond.), F.R.C.P., F.R.S.E., Senior Physician and Lecturer on Clinical Medicine, Westminster Hospital. Vol. I. General Diseases: Diseases Excited by Atmospheric Influences; the Infections. Vol. II. General Diseases continued: Diseases Caused by Parasites; Diseases Determined by Poisons Introduced into the Body; Primary Perversions of General Nutrition; Diseases of the Blood. Cloth. Pp. 441 and 380 respectively. Price, $2.00 per volume. New York: MacMillan Co. 1901.

This work, two volumes of which have already appeared, is a brief but in many respects satisfactory compendium of medical practice. It is more of a compendium in that it is a composite work, the subjects being treated by different authors, the names of many of whom carry weight in this country as well as in Great Britain. The general articles are largely by the editor, Dr. Allchin, but the special ones on different diseases are by many different writers. This volume satisfactorily covers the subject of general diseases in the main, though the articles are necessarily brief, in one or two cases unduly so. For example, pneumonia is a general infection, but is here treated only in its aspects as an epidemic disease, leaving out the general description and what the practitioner most desires to know. The second volume also deals with general diseases and is of the same general character.

Therapeutics: Its Principles and Practice. By Horatio C. Wood, M.D., LL.D. (Lafayette-Yale), Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. Eleventh Edition. Remodelled and in Greater Part Rewritten. By Horatio C. Wood and Horatio C. Wood, Jr., M.D., Demonstrator of Pharmacodynamics in the University of Pennsylvania. Cloth. Pp. 850. Price $5.00. Philadelphia and London: J. B. Lippincott Co. 1900.

Wood's Therapeutics has been so long before the medical public that its eleventh issue hardly requires an introduction. The author, however, states that while other editions have been chiefly improved by incorporation of new matter, in the present edition an effort has been made throughout to get a new view of the whole subject of therapeutics, presented in the most attractive form. The use of small type for minor descriptions and discussions, etc., is an advantage. Taking the references out of the body of the text and putting them in nonpareil at the end of the chapter is perhaps more satisfactory to many, but this is not as well as having them directly before the eye on the page in which they are made; this, however, is a minor matter. All new drugs of any value, according to medical experience, are included, though no work can keep up with the flood of products which are constantly being put out and recommended to the medical profession. The present edition will undoubtedly still hold its place among the standard textbooks on therapeutics.

The Year Book of the Nose, Throat, and Ear. The Nose and Throat, edited by G. P. Head, M.D., Professor of Laryngology and Rhinology in the Post-Graduate Medical School of Chicago. The Ear, edited by Albert H. Andrews, M.D., Professor of Otology in the Post-Graduate Medical School of Chicago. Cloth. Pp. 416. Price $2.00. Chicago: The Year-Book Publishers. 1901.

The previous volume of this year-book was so well received that the editors continued their work and give us this year a somewhat larger compilation of the literature on nose, throat and ear diseases than was given last year. The abstracts are well selected and cover the whole range of the ordinarily accessible literature. They notice the difficulties which every one must experience who is engaged in the work of culling out the essence of what has been written, and remark in their preface that many articles have been omitted on account of their being simply statements of accepted opinions written for the general practitioner, or in some cases that they touch upon so many points of such importance that abstracting is not possible. They are mentioned under proper headings so that those interested may readily refer to them. The two volumes that have appeared of this year-book make one hope that it will receive sufficient support to justify its continuance for years to come.

A Text-Book of Pharmacology and Therapeutics, or the action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D., Aberd., Professor of Materia Medica and Therapeutics in the University of Michigan. Second Edition, Revised and Enlarged. Illustrated with 47 Engravings. Cloth. Pp. 732. Price $3.75. Philadelphia and New York: Lea Brothers & Co. 1901.

The first edition of this work was exhausted in a little over a year and the present volume has been brought up to the latest advances in the subject, though not many changes, as the author remarks, have been found necessary. The work holds a position of its own among handbooks on therapeutics and its apparent success is well deserved.

Association News.

The Doctors' Special to St. Paul.

Louisville, Ky., March 15, 1901.

To the Editor:—The nearness of the next meeting of the Association in St. Paul suggests the necessity of plans being laid for attendance by the profession of the country, and consequently the selection of a route. The many advantages of traveling in large numbers to these meetings can be vouched for by those who have been fortunate enough to so travel to several meetings in the past.

As Louisville is one of the gateways for Chicago and St. Paul, arrangements have been made for special accommodations from this point, with special doctors' sleepers attached to the regular service of the Monon Route to Chicago and from that point by the Chicago & Northwestern Railroad to St. Paul. Close connections will be made at Louisville with the Southern and the Louisville & Nashville railways from points in the South, Atlanta, Birmingham, Nashville, Asheville, and Memphis. A day trip will be made between Louisville and Chicago, June 3, and a night trip from Chicago to St. Paul, arriving there in time for breakfast the first day of the meeting, June 4.

At this writing the rates for the St. Paul meeting have not been announced, but the undersigned will be pleased to answer queries as to the connections, time of arrival and departure of connecting lines, etc., and make sleeping-car reservations for those who wish to join the "Doctors' Special to the American Medical Association." Very truly yours,

111 West Kentucky Street. Henry E. Tuley, M.D.

Deaths and Obituaries.

John R. Page, M.D., University of Virginia, Charlottesville, 1850, died at that institution March 11, from acute Bright's disease, aged 71. He was chief surgeon in the confederate service, and was afterward a professor in the Louisiana Military Academy, and in the Washington Medical College of Baltimore. In 1873 he became a professor of agricultural chemistry and scientific farming in the University of Virginia. In 1887 he resigned the latter position and resumed the practice of his profession.

John A. Goldsberry, M.D., Rush Medical College, Chicago, 1857, who was struck by a train at West Union, Ind., February 25, died at Kingman, March 7, from his injuries. He was 65 years old. He served through the Civil War at Baton Rouge, La., and then practiced in Annapolis, later in Bloomingdale, Ind. He was a member of the Park County and Indiana State Medical societies, and of the American Medical Association.

Jason Walker, M.D., Medical School of Maine, Brunswick, 1865, a member of the Androscoggin County and Maine State Medical societies, and of the American Medical Association, and for more than thirty years a practitioner in Minot, Maine, died at his home in that place, from chronic bronchitis, March 7, aged 66.

Edward Bradley, M.D., University of Vermont, 1859, at which institution he was for a time demonstrator of anatomy, died at his home in New York City, aged 65 years. During the Civil War he was an acting assistant-surgeon. He was an active dispensary surgeon and in repute as a neurologist.

James Johnston, M.D., Starling Medical College, Columbus, Ohio, 1857, died suddenly from nephritic colic March 9, at his home in Gallipolis, Ohio, aged 67. He was assistant-surgeon, O. V. I., during the Civil War, and a prominent physician of southern Ohio.

John T. Black, M.D., College of Physicians and Surgeons, Baltimore, 1883, for several years physician at the steel works of the Carnegie company, Duquesne, Pa., died at his home in that place, March 10, from pneumonia, after an illness of three weeks, aged 53.

Thomas A. Fairbairn, M.D., Bellevue Hospital Medical College, New York, 1867, formerly of Detroit, Mich., but for the last thirteen years a resident of California, died in San Diego, Cal., from pneumonia following influenza, March 6, aged 71.

Ferdinand Bazan, M.D., Faculty of Medicine, Paris, France, 1873, formerly a well-known practitioner of San Francisco, and for fourteen years surgeon-in-chief of the French Hospital, died at Glion sur Montreux, Switzerland, March 6.

Henry C. McCoy, M.D., Northwestern University Medical School, Chicago, 1865, a pioneer physician of Algona, Iowa, where he had practiced for more than thirty years, died at his home in that place, from pneumonia, March 10, aged 62.

Caleb E. Martin, M.D., University of the Victoria College, Cobourg, Ont., 1856, of Toronto, died March 11, at Whatcom, Wash., where he had gone on account of ill health. He served as a surgeon under General Sheridan in the Civil War.

John B. McDonald, M.D., Harvard University Medical School, Boston, 1865, an early settler and practitioner of Dickinson, N. D., who moved, in 1896, to Spokane, Wash., died at his home in that city, March 3, aged 63.

Thomas Riley, M.D., University of Michigan, Ann Arbor, 1874, who practiced for many years at Adams, Mass., died from general paresis, after an illness of two years, at the Northampton Hospital, March 4, aged 58.

Robert H. Dodge, M.D., University of Georgetown, Washington, D. C., 1893, physician-in-charge of the Conrad Sanatorium, Relay Station, Md., died at his home in Bethesda, Md., after a short illness, March 11, aged 29.

Ashley N. Denton, M.D., Texas Medical College and Hospital, Galveston, 1866, died at his home in Austin, Texas, March 4. He was for several years superintendent of the state insane asylum at Austin.

Allan S. MacDonell, M.D., College of Physicians and Surgeons of Ontario, Toronto, 1882, died at Rat Portage, Ont., where he had practiced for several years, March 6, from pneumonia, aged 47.

Emory Hawkins Davis, M.D., University of Vermont, Burlington, 1872, died at his home in Plainfield, Conn., aged 56. He was a member of the State and Windham County medical societies.

Hiram Crounse, M.D., Castleton Medical College, Castleton, Vt., 1847, one of the oldest physicians of Albany County, New York, died at his home in Clarksville, March 1, aged 80.

Philip Du Bois Hoornbeck, M.D., Geneva Medical College, Geneva, N. Y., 1846, died recently at his home in Wawarsing, N. Y., where he had practiced for more than half a century.

Caleb Hale, M.D., University of Louisville, Ky., 1859, for more than forty years a practitioner in Daviess County, died at his home near Whitesville, Ky., March 7.

R. L. Mayfield, M.D., Barnes Medical College, St. Louis, died at Mayfield Sanatorium, Marble Hill, Mo., of which he was assistant superintendent, March 5.

Frederick M. Johnston, M.D., Detroit Medical College, 1897, a practitioner of Three Oaks, Mich., died from appendicitis, in a Detroit hospital, March 1.

John Sims, M.D., Medical College of Georgia, Augusta, 1855, prominent as a citizen, physician and legislator, died at his home in Leverett, Ga., March 4.

Jesse A. Hartson, M.D., College of Physicians and Surgeons, Baltimore, 1894, died at his home in Ava, N. Y., March 7, from pneumonia, aged 33.

John Sylcurk, M.D., University of Maryland, Baltimore, died from consumption, March 5, at the home of his parents in Frederick, Md., aged 25.

David S. Cook, M.D., College of Physicians and Surgeons, Keokuk, Iowa, 1855, died at his home in Wheatland, Iowa, suddenly, March 7, aged 76.

Thomas J. Patterson, M.D., University of Louisville, 1851, died at his home near Caney Spring, Tenn., March 3, after a lingering illness.

W. Eugene Martin, M.D., University of Louisville, 1894, died at McColl, Marlboro County, South Carolina, March 8, aged 25.

Martin J. Hutchens, M.D., University of Vermont, Burlington, 1862, died at his home in Redwood, N. Y., March 1, aged 75.

James H. Rogers, M.D., Jefferson, 1855, once a practitioner of Sag Harbor, N. Y., died in New York City, March 12, aged 71.

Sullivan B. Dorn, M.D., University of Buffalo, died in a hospital at Bradford, Pa., from pneumonia, March 6, aged 59.

Alonzo T. Smith, M.D., Geneva Medical College, died at his home in Syracuse, N. Y., March 8, from pneumonia, aged 80.

Sanford H. Sloan, M.D., Missouri Medical College, St. Louis, 1881, died from cerebral hemorrhage, March 10.

Paul von Seydewitz, M.D., University of Heidelberg, Germany, 1869, died in New Orleans, March 15, aged 74.

David O. Moore, M.D., health officer of Bloomington, Ill., died from chronic kidney disease, March 15, aged 68.

Miscellany.

The Vitality of the Bubonic Bacillus.—Professor Koch, of Berlin, reports upon 1400 cases of the bubonic plague, as seen in Bombay and other parts of India. He avers that the bacillus has but little vitality outside the bodies of animals, and adds that Haffkine's serum is endowed with undoubted protective qualities.

Cataract and Tetany.—Similarly to diabetic cataract, the lens may become clouded during the course of tetany. The cataract in this case is regular and does not resemble the ordinary variety. The *St. Petersburg Med. Woch.*, No. 4, mentions two cases, one a woman of 22, the other a man of 35. The tetany in the latter case had persisted eleven years; all the hair had fallen out, and there were frequent attacks of headache and diarrhea. The cataract ripened in each eye with a year's interval. Both were successfully removed.

Medical Advertising and the Lay Press.—Whenever we find a lay journal that governs itself by high ethical principles as regards certain medical questions in respect to which members of the lay press are generally and collectively sinners, it is a pleasure to note the fact. The following editorial extracts, therefore, from the *Cedar Rapids* (Iowa) *Gazette* are offered with commendation:

> It is possible that *The Gazette* has no business to refer to what other papers do in business matters, and yet it may be true that there are some questions, the calling attention to which might result in good. No reference is made or intended for any publication in particular, the simple idea being that newspapers in general should refuse to contaminate their columns with a lot of vile advertisements, some of them being filthy. It looks as if papers devoting so much space to such advertising are either hard up for clean advertising or else have no care as to how much filth they place before their readers. * * * There are the villainous references to female troubles, which no honorable or decent paper would print. Publications that name diseases and display them in great black type insult the sacredness of womanhood. There are a number of such advertisements and the more of them the greater the shame.
>
> Among the vile advertisements also are remedies for all sorts of private and venereal diseases, and it is only reasonable to suppose that it must "pay" the advertiser, and consequently it follows that some readers of such papers need the stuff.
>
> Certain kinds of pills are advertised that are intended for criminal purposes, and they lead to added crimes by making those immorally inclined believe that it will save them from trouble, when it gets them into it instead.
>
> No parent should permit papers containing such advertisements to be found in their homes.
>
> Bishops, clergymen, editors and others are either induced to permit the use of their names for notoriety, are paid for so doing, or their names are forged to all sorts of rotten advertisements.
>
> Reading notices concerning various nauseating matters are placed right between clean news items in order to be sure and attract attention. How do clean advertisers of clean goods like to see it? How much is their advertising worth in such papers? * * *

Antimosquito Experiences With Malaria.—Professor Fermi, of Sassari, Sardinia, states (*Gazz. degli. Osp.*, March 3) that 27 soldiers were placed in a dormitory in which 17 out of the 18 previous inmates had been taken with malarial fever. The room had been whitewashed and screened, and the new occupants were protected with gloves and hoods, but none took any quinin. None showed any trace of malarial infection during the month of the test, while 23 of the occupants of the next dormitory became affected with malaria. Another building had the reputation of being extremely malarial, but after the windows were screened none of the new inmates became affected. The third experiment was with a party of 25, and another of 32 soldiers who marched and camped out along the most malarial portion of the shore. The only protections in this case were gloves and hoods worn by the members of the expeditions. None showed any signs of infection, but a mocking spectator who accompanied them on horseback, unprotected from mosquitoes, exhibited symptoms of the quotidian type in less than a week. Another party of 27 members slept in the open air for ten nights, with no symptoms of infection except in the case of one youth who was incommoded by the hood and occasionally pulled it off.

Does Vaccination Prevent Smallpox?—The *Cincinnati Lancet-Clinic* of March 16 prints a letter recently sent to Dr. E. Stuver, in which the writer says: "The only objection I can possibly put forth against your deductions is that you believe that *vaccination prevents smallpox.* On this rock *you have foundered*, as no such fact can be sustained by science, experience or common sense. Take away sanitary science and all infectious diseases will be rampant in the land." In Dr. Stuver's comprehensive answer he defines "sanitary science" as "the science and art of promoting healthy development, maintaining the mature organism in a healthy condition of normal functional activity, preventing the invasion of diseases and stamping them out as soon as possible when they have arisen," and says: "1. No historical fact is better established than that, before the discovery of vaccination, smallpox was one of the most fatal and dreaded scourges which afflicted humanity. It swept over Europe, leaving death, devastation and terror in its path; indeed, so widespread was the disease that, as the historian Macaulay informs us, it was a rare thing at one time to find a person in London not disfigured or marked by that dread disease. To-day smallpox is one of the rarest diseases, and scarcely figures in mortality statistics. You say this reduction has been brought about by 'sanitary science,' whatever you may mean by that, because if vaccination is *not* one of the most effective sanitary measures the world has ever seen, I do not know what you would designate it. 2. The English, German, French or American soldiers who have been properly vaccinated can be brought face to face with smallpox in the unhealthy tropics, in places reeking with filth, and all sanitary conditions much worse than the London described by Macaulay, and these soldiers are almost absolutely immune against the disease. Why is this? Does the sanitation of the countries from which they come, thousands of miles away, protect these men, in the midst of unnatural and health-destroying environments, against a disease which is destroying thousands of *acclimated natives?* 3. Why is it, if vaccination does not prevent smallpox, that epidemics of the disease can be brought under control by this means, and *by this means* *alone?* Else why should the bitter opponents of the measure resort to it for safety in the face of danger, as they did in the epidemic in England a few years ago? 4. I have often thought that through generations of vaccination a vital resistance has been created, and a partial immunity established, so that when smallpox attacks even those who have not been personally vaccinated, owing to the mitigating influence of vaccination in their ancestors, the disease assumes a milder form. 5. As every observer knows, smallpox epidemics nearly always follow comparatively long periods of immunity from the disease, when the people have become careless, neglected to be vaccinated, and there are large numbers susceptible to the disease. 6. But the antivaccinationist holds up his hands in horror, and with a scared look and bated breath calls our attention to the horrible diseases and occasional deaths caused by vaccination. Admitted that syphilis and other diseases have been conveyed, and blood-poisoning caused in rare instances (and they are exceedingly rare, compared with the whole number of vaccinations), still the evil is but a tiny trickling rill alongside the great river of beneficence which this grand discovery has brought to soothe and save suffering humanity. With approved modern methods for the production and marketing of bovine vaccin virus, and proper antiseptic or aseptic precautions in making the vaccinations, even these infrequent accidents ought to be almost entirely prevented. It would be just as fair to formulate an opinion as to the propriety and justifiability of abdominal operations and major surgical operations from their pre-antiseptic and pre-aseptic mortalities as it is to condemn vaccination for accidents and dangers that attended the use of infected virus and careless methods of performing the operation years ago, rather than to judge it by the results following the use of pure bovine virus and aseptic operating of the present time. 7. Then, too, a method which has passed through the ordeal of more than a hundred years of the closest investigation and most searching criticism, which has received the unqualified approval and support of nearly all scientific physicians in the whole civilized world, which has lifted the dark cloud of terror which paralyzed humanity so that the great majority of people have come to regard the once dread disease as an insignificant danger; when, I say, any preventive measure has accomplished such results as these, he is, indeed, a bold man who will advocate its discontinuance, unless he has something better to offer in its place. 8. I have often thought that, with the great benefits and small dangers of vaccination so generally recognized, and its benefits established on such a firm foundation, it was largely a matter of supererogation to resort to such severe measures in warding off smallpox. The persons who will not protect themselves against the disease do not have 'common sense' enough to enjoy good health, and should be left to their fate."

Societies.

COMING MEETINGS.

Tri-State Medical Society of Iowa, Illinois and Missouri, Keokuk, Ia., April 2-3, 1901.

Medical Association of the District of Columbia, Washington, D. C., April 2, 1901.

Tennessee State Medical Society, Nashville, April 9-11, 1901.

Florida Medical Association, Jacksonville, April 10, 1901.

Western Ophthalmological and Otolaryngological Association, Cincinnati, Ohio, April 11-12, 1901.

Medical Association of the State of Alabama, Selma, April 16, 1901.

Medical Society of the State of California, Sacramento, April 16-18, 1901.

South Carolina Medical Association, Florence, April 17, 1901.

Medical Association of Georgia, Augusta, April 17, 1901.

Louisiana State Medical Society New Orleans, April 18-20, 1901.

Medical and Chirurgical Faculty of Maryland, Baltimore, April 23-26, 1901.

Texas State Medical Association, Galveston, April 23, 1901.

American Association of Genito-Urinary Surgeons, Old Point Comfort, April 30, 1901.

Association of American Physicians, Washington, D. C., April 0, 1901.

French Congress of Ophthalmology.—This congress is to convene at Paris, May 6. The subject announced for discussion is "The Value of Iridectomy in Glaucoma."

Carbondale (Pa.) Medical Society.—At the annual meeting of this society, held March 4, Dr. William W. Fletcher was elected president, and Dr. Sumner T. Davis, Jermyn, vice-president.

Union Medical Society of Northern Michigan.—This society announces its first quarterly meeting of the twentieth century, to be held at Greenville, April 9. Dr. Horace L. Bower, Greenville, is secretary.

Medical Society of the State of Tennessee.—The sixty-eighth annual session of this society will be held at Nashville, April 9, 10 and 11. Dr. William D. Haggard, Jr., is secretary, and Dr. Deering J. Roberts, chairman of the committee on arrangements.

Henderson County (Ill.) Medical Society.—This society was reorganized early this month, at Oquawka, and Dr. Isaac F. Harter, Longhurst, elected president; Dr. Coleman J. Eads, Oquawka, vice-president, and Dr. William D. Henderson, Biggsville, secretary and treasurer.

Lamar County (Ala.) Medical Society.—The annual meeting of this society was held at Vernon, March 4, and the following officers elected: Dr. Berry E. Turner, Richards, president; Dr. William L. Morton, Vernon, vice-president, and Dr. Judge C. Buckelow, Sulligent, secretary.

St. Clair County (Ill.) Medical Society.—The annual meeting of this society was held in Belleville, March 8, and the following officers elected: Dr. Julius Kohl, Belleville, president; Dr. James O. DeCourcy, East St. Louis, vice-president; Dr. Buenavandura H. Portuondo, Belleville, recording secretary; Dr. Adolph E. Hansing, East St. Louis, corresponding secretary, and Dr. Adolph Schlernitzauer, Millstadt, treasurer.

Rhode Island Medical Society.—A meeting of this society was held at Providence, March 7, at which the election of officers for the year following the next annual meeting took place: Dr. George F. Keene, Howard, president; Drs. William R. White, Providence, and Christopher F. Barker, Newport, vice-presidents; Dr. Frank L. Day, Providence, recording secretary; Dr. Herbert Terry, Providence, corresponding secretary and Dr. Frederick T. Rogers, Providence, treasurer.

Berlin Society of Internal Medicine.—This society celebrated its twentieth anniversary February 18, with much ceremony and a banquet. Von Leyden was made honorary president, as the society in a large measure owed its inception to his efforts. Honorary membership was also conferred on Baccelli, Nothnagel and von Behring. E. Roux, of Paris, Erb, Ehrlich, Weigert, Babes of Bucharest, and Hassimoto of Tokio, were appointed to be corresponding members.

ST. LOUIS MEDICAL SOCIETY OF MISSOURI.

Meeting held February 16.

Dr. L. E. Newman, president.

Carcinoma of the Prostate.

Dr. L. E. Newman submitted a specimen of this. The patient, a man of 49, was operated on May 12, 1900, a suprapubic cystotomy being done to relieve an intense cystitis and for diagnosing the prostatic trouble, which was believed to be carcinoma. It was impossible to remove the prostate, so the bladder was simply drained. The patient did well for seven months, but died in coma recently, having had cerebral symptoms for the last three weeks. Death was probably due to metastatic carcinoma of the brain, but this was not verified. The kidney contained three or four concretions and its artery was unusually large. The bladder at the time of operation was greatly thickened and roughened, so much so that it resembled the interior of a heart. After the seven months' drainage, it looked fairly healthy. When the patient was placed on the table he was deeply septic, the temperature being 103 F. His weight at the time of his death had fallen from 230 to 150 pounds. There were no kidney symptoms, unless the coma was one. The pain in the rectum was frightful and interfered with sleep. The prostatic growth he believed to be cancerous, because of its consistency and the involvement of surrounding structures.

Veratrum Viride: Its Undeserved Neglect.

Dr. E. W. Saunders read a paper on this topic. He considered its historical side, then its physiologic action. He finds it by far the safest motor depressant, as it has no detrimental effect on the blood and no effect on the ameboid movements of the white blood-corpuscles. Neither has it any harmful effect on those processes which ultimately destroy the invading micro-organisms in acute infectious diseases. Its depressant activity on the motor cells in the anterior cornua of the spinal cord indicates its use in puerperal eclampsia, in which he considers it the safest drug we can employ. During the eclamptic seizure he administers chloroform and then at once gives veratrum in large doses, maintaining the pulse at the normal rate. The lessening of the blood-pressure quiets the excitement of the cortex, perspiration follows, and elimination of the toxic substances by the kidneys is increased. He also prefers veratrum to the coal-tar products in the onset of infectious diseases, as scarlet fever, pneumonia, influenza, meningitis, etc. He spoke of its use in the treatment of pneumonia at length, and believes that the objection which has been raised against its use, i. e., that it depresses and weakens the heart, has little weight when compared with its favorable effects.

Dr. W. G. Moore said that when he entered the profession, twenty-five years ago, veratrum was a settled remedy, and he intends to go back to veratrum because of old associations, and because of the failure of other remedies in pneumonia.

Dr. Robert Barclay has recommended veratrum in middle ear disease. In "Hare's System of Therapeutics" he contributed an essay on its use in the early congestive stage of middle ear disease. He considers it is fever of the sthenic type and a bounding pulse.

Dr. W. Hutson Ford wondered that any one dared mention veratrum viride, for it has been systematically decried by all the dullards of the profession. He has been a ceaseless student of the drug, beginning its use in 1857, four years after Norwood first brought it prominently into notice. He used Norwood's tincture only, as none other approached it in uniformity or certainty. While a young practitioner, in 1857, he had twenty-four cases of typhoid in one epidemic. The first two were treated in consultation with an older physician in the old way, and both died. Being at that time especially engaged with a study of the production of animal heat in the economy, and its effects in disease, in wasting the muscular and nervous tissue, and predisposing to all forms of local congestion and parenchymatous inflammation, he determined to use veratrum and so limit the intensity of all the features of the disease. His success was complete, and the severity of the cases was at once abated. Upon this basis he used it in conjunction with mercurial evacuants, in the rest of the 24 cases of typhoid fever, and all got well, as everybody else's cases do, however, for that matter. In 1849 he gave veratrum in the treatment of 183 cases of yellow fever, with a death-rate of 8 per cent.

Dr. R. M. Funkhouser was surprised that Dr. Saunders had not mentioned Fordyce Barker, who did much to popularize this drug. If we could educate our nurses to watch its effects we would better know how to give it. Veratrum is a drug to be studied, and is more difficult to understand than digitalis. Another difficulty is the absence of a standard in drugs—a uniformity of strength—so that doses can not be relied on.

Dr. A. R. Kieffer said that he had had no personal experience with veratrum, but had come to rely more on his vis medicatrix *naturæ*. Purgation, if too active, he believes, would defer solidification and prolong the attack in pneumonia.

Dr. T. M. Hopkins recalled a late case in which the patient, after going skating, developed the classic symptoms: pulse 134, respiration 40, temperature 104.6 F. He recovered speedily under veratrum. He pushes the drug until the patient vomits, then reduces the dose to one-fourth, until the patient perspires freely, perhaps twelve to fourteen hours. At the same time he uses calomel, ipecac, etc., or an injection. Veratrum also does well in appendicitis, together with early and frequent injections.

Dr. H. Jacobson said that he was called in consultation to a case of puerperal eclampsia, the second attack in two years. The urine was loaded with albumin casts and blood-corpuscles. Veratrum, saline injections, hot packs and chloroform inhalations were given for five hours and the patient recovered from the convulsions, although the nephritis was still present, and had been for several years before confinement.

Dr. John Zahorsky said that veratrum viride seemed to work favorably in influenzal pneumonia and in the pneumococcic infections also. Its use, however, must be studied well and long, and the point of change from veratrum to stimulants carefully watched for. For the first three years of his practice he was utterly discouraged in pneumonia, but he now uses veratrum and feels that he can accomplish a little.

Dr. A. Ravold said that he tried veratrum in pneumonia at the City Hospital, and came near having disastrous results in the first case. There were pallor, exhaustion and sweating. High fever indicates the use of remedies that diminish heat production or cause heat dissipation or combinations of the two effects, and he asked the essayist to elucidate this point.

Dr. J. H. Tanquary felt that the toxic effects of veratrum viride had been magnified. It does produce nausea, vomiting, etc., but there are few deaths on record from its use. From experience he felt that veratrum was the best remedy in the acute stage of pneumonia. Purgation and blood-letting were also useful.

***Dr. Saunders**, in closing*, said Norwood's tincture is most reliable. We can speculate on the manner in which it reduces temperature, but with little use. It is not a powerful antipyretic, but acts slowly and never excessively if used carefully. Some years ago an Italian exploited digitalis as a germicide in pneumonia. Another said he could make a diagnosis by its effect on the temperature. He tried it faithfully and found the claim to be a humbug. Digitalis is not an antipyretic. In anginæ of "grip" origin, highly painful, with symmetrical, deep redness of the fauces and edema, he obtains quick relief from veratrum, giving a drop on the tongue every fifteen minutes. In five cases thus treated, deglutition was almost impossible in two. In articular rheumatism he uses it in combination with salicylates, also with excellent effect in beginning appendicitis and pelvic peritonitis.

CHICAGO MEDICAL SOCIETY.

Meeting held March 6.

The president, Dr. J. H. Stowell, in the chair.

The evening was devoted to a "Symposium on Sanitation."

Demands of Sanitary Science.

Dr. H. M. Bracken, St. Paul, Minn., secretary of the Minnesota State Board of Health, read a paper on this subject. He said that one of the first things that comes under the control of the sanitarian is the suppression of a nuisance, which may be defined as some feature objectionable to the sense of sight, smell or hearing, or a menace to health. It does not require very close observation to note a nuisance, be it in the form of filth in streets or alleys, or about private residences or public buildings, or in public conveyances. The ease with which a nuisance is suppressed depends decidedly upon the conditions which surround it. A nuisance of marked quality or quantity in the better districts of a city would not be tolerated for a single day, while a similar condition might be continued indefinitely in the slums, either because of the indifference of the people to its existence, or the negligence of sanitary officials or landlords. The bearing of sanitation upon a nuisance is so generally recognized that in dealing with one the almost universal question is: What effect has it upon the health of those annoyed? If it can be proven to have a deleterious effect, half the battle for its suppression is won. Many of the apparently pronounced nuisances are decidedly injurious to health. Here it is that the demands upon sanitary science begin. The bacteriologist and the chemist determine the degree of danger; while the sanitarian determines the means of its abatement or removal.

The disposal of refuse taxes the ability of the sanitarian according to the varying conditions present in large and small cities. Refuse includes street sweepings, various cast-off articles of clothing, or factory, kitchen garbage, manure, dead animals, ashes, etc. Kitchen garbage has a food value in the feeding of hogs, and any city with a population not exceeding

300,000, and surrounded by an open country, should find but little if any trouble in disposing of such material at comparatively little expense. It may be necessary to dispose of it by cremation, but this, as a rule, is a wasteful method and expensive, and is to be avoided when possible. The proper disposal of garbage without cremation calls into play the proper construction and use of collecting vans; the proper construction and care of feeding pens; the proper organization and control of a sanitary system of inspection, and the proper care of the animals to be utilized as scavengers.

Closely related to garbage and waste disposal is the disposal of sewage. The problem is largely one of engineering. It is quite generally the custom to conduct sewage to the nearest stream into which it can be discharged, thus converting a natural water-course into an open sewer. By this method the safe supplies of drinking water are cut off. It therefore becomes a commercial as well as a sanitary proposition to determine which is the wiser course: to turn sewage directly into streams, thus destroying natural water-supplies, or to filter the sewage before it enters the streams, thus leaving the natural water-courses unpolluted. The essayist believes that the latter is the correct course.

As to the control of the spread of infectious diseases, probably there is nothing that will accomplish more than a thorough system of school inspection. School inspection does not cover the entire problem of proper sanitation for schools, for the proper ventilation, heating and lighting of school buildings, together with an insistence upon the individual cleanliness of pupils, places a great responsibility upon architects, which too often is not recognized.

In dealing with diseases that are highly infectious the proper isolation of patients is important. The ordinary methods of quarantine now practiced are barbarous, for with the appearance of certain infectious diseases in a family the entire household is tied up; the well with the sick. This may be quite satisfactory for the community at large, but he believes it is unfair to those not ill to be put in quarantine, for it subjects them to the maximum danger of infection. Patients ill with an infectious disease that is readily communicated to others should be promptly removed to an isolation hospital, unless there is ample opportunity for isolation in the residence.

Of all infectious diseases demanding attention pulmonary tuberculosis probably holds first place. He thinks it is criminal negligence not to provide special hospitals or homes for the tuberculous. The state can well afford to spend many thousands of dollars for the construction and care of sanatoria for these unfortunates, even should such action be looked upon as a protection for the well rather than as a means for caring for the sick.

It rests upon physicians in this country, through their various medical organizations, to transform the great body of medical sanitarians into medical specialists beyond and above the influence or control of politics.

State Aid in Prevention of Tuberculosis.

Dr. Charles O. Probst, Columbus, Ohio, secretary of the Ohio State Board of Health, followed with a paper on this subject. He presented a brief argument in favor of the following propositions: 1. The state should provide hospitals for the reception of persons suffering from tuberculosis, and should assist municipalities or counties to construct similar institutions. 2. Physical education, conducted by trained medical men, should be made a part of the common school course; and students in normal schools, colleges and universities should be instructed in hygiene, including a proper knowledge of the causes and prevention of tuberculosis. 3. The state should exercise a much closer supervision over the construction, ventilation and care of workshops and factories, especially where the occupation is conducive to tuberculosis. 4. The state should prohibit the sale of milk from tuberculous animals, and should provide for the inspection of dairy cattle. It should enforce the proper stabling and care of such animals.

In 1890 the census returns gave a mortality from consumption alone, in Illinois, of 5698, or 149 deaths per 100,000. The victims are mostly young adults—the bread-winning men and child-bearing women; hence the loss to the state is much greater than the mere number of deaths would indicate.

The individual, even if properly instructed, is, in a large measure, unable to protect himself against this widely prevalent disease. The state should therefore assist him, not only because it is its duty to protect its citizens against dangers of a general character, but also to protect itself against the unnecessary loss of its working capital—healthy men and women. Admitting these premises, the essayist then proceeded to discuss the ways and means.

The first thing proposed is state hospitals, and municipal and county hospitals, erected with the assistance of the state for the reception of consumptives. The state hospital may be for the reception of selected, recent cases, with the expectation of curing and returning to society many of its useful members who must otherwise perish, or it may receive patients who, on account of surroundings, are especially liable to give rise to other cases of the disease. The latter plan is more directly in line with preventive measures. The former is the one usually adopted by the state, as giving, under present conditions at least, greater returns. State hospitals for the cure of consumption favor its prevention. Not only are patients isolated who may spread the disease, but they receive there a training which, on being returned to their homes, makes them an important aid in disseminating among the people correct ideas of measures for the prevention of consumption—measures which should be practiced in the homes of all consumptives.

The essayist urged the erection of a hospital for consumptives, by the state, for the treatment of carefully selected cases. It would seem to be wise, at least in the beginning, that patients should pay the greater part of the operating expenses. The charge of $5 a week, established for the new Massachusetts Hospital, appears to be a reasonable one. Hospitals more strictly for the prevention of tuberculosis should be established by municipalities, or possibly by counties. The aim here should be to select and isolate those cases which are the greatest danger to the public. Such cases are usually found among the unfortunate, poorest classes. Many of these find their way into general hospitals or have to be treated in their homes at public expense.

He urged the physical education of school children, with the teaching of hygiene and the cause and prevention of consumption to students in advanced institutions of learning. Practically no attention is given to the physical education of school children. Where school gymnastics are practiced, they are not conducted or supervised by persons having the necessary knowledge of the subject. There is no individualism in such work. All are treated alike. School children, in his opinion, should be under the constant supervision of a specially trained medical inspector. They should be measured and weighed periodically. Special exercises, as, for example, singing or other lung exercises, should be prescribed and enforced when needed. Parents should be notified of marked physical defect, and urged, in proper cases, to consult the family physician where medication or special diet seemed to be indicated. He would urge that hygiene be taught in high schools, normal schools and universities. A proper understanding of the causes and means of prevention of tuberculosis would form but a part of the great benefits to be derived from such teaching.

The essayist then discussed at length the direct and indirect causes of consumption, and stated that it is uncertain to what extent tuberculosis is due to the ingestion of milk, butter and meat from tuberculous animals.

Miscarriage of Municipal Sanitation.

Dr. Ernest Wende, health commissioner of Buffalo, N. Y., read a paper of which the following is a summary. There should be: 1. Unity of law, procedure and action throughout the state in regard to contagious diseases; even further in this relation, throughout the states, interstate contagious disease laws. 2. Interstate law covering contagious diseases in animals, particularly tuberculosis. There seems every reason for believing that the pathology of the superior animal—man—would be benefited by such legislation. 3. The vesting of city health officials with certain state board of health inspection powers to permit them, under certain circumstances, to extend their action beyond the municipal confines. 4. Municipal sanitation and state medicine to be made a more important feature in education, particularly in universities. It should be made contingent that health officers qualify by such a course of study before being eligible. 5. Requirements of sanitary education everywhere; in the public schools, in the high schools, colleges and universities, so that by the time the younger generations mature enlightenment will have reached our various legislative bodies. 6. Selection of municipal health officers for their fitness, with secure tenure of office and proper compensation. The municipality should not be exposed to an unnecessary risk by politics.

Dr. Arthur R. Reynolds, health commissioner of Chicago, reviewed, by the aid of lantern slides, the work of the Department of Health of Chicago from 1851 to the present time.

Dr. John A. Robison, in the discussion, emphasized the fact that the state is in duty bound to enact such laws as will prevent the spread of tuberculosis. If there were 800,000 cases of smallpox in Illinois, the inhabitants would be panic-stricken and legislators would not hesitate to appropriate any amount of money to stamp out the epidemic; and yet tuberculosis is present with us all the time. It is not so virulent as smallpox, but it is ever-present and more insidious in its contagiosity and infectiousness. He mentioned two methods for stamping out this disease: 1, by educating the inhabitants, by teaching hygiene and the causes and nature of the spread of the disease in high schools, colleges and universities; 2, by the state educating the people that the disease is preventable and curable.

Dr. William A. Evans stated that the United States government at the present time is inspecting meat very thoroughly, for the protection of its foreign trade. The governments of foreign countries demand the inspection of meat, and commercial considerations require that the demands be complied with. The city has a legal right to control all of the cows that are to supply it with milk, and while the people who supply this milk are not inhabitants of the city, are not directly amenable to the city laws, their products are amenable to the laws of the city, and therefore the suppliers of milk are indirectly amenable to the laws themselves.

One of the most urgent necessities confronting the people of Illinois is a law requiring a certificate of death before a burial can be made. He has talked this matter over with some of the police and cemetery authorities and has been assured that they would give such a law their hearty endorsement.

Dr. George W. Webster stated that such a burial law has been framed by the State Board of Health, and will be introduced at the present session of the legislature.

Dr. Denslow Lewis stated that when he acted as a health officer in Hyde Park, Chicago, he met with violent opposition, not only from the public, but the medical profession, in his endeavor to enforce the requirements of the State Board of Health, which had just then enacted certain regulations, as well as in endeavoring to enforce municipal ordinances. He spoke of the British laws and the manner in which they are enforced, and of a plan adopted by the Indiana State Board of Health by which orders can be properly executed.

PHILADELPHIA PATHOLOGICAL SOCIETY.

Meeting held February 28.

President Dr. Frederick A. Packard in the chair.

Carcinoma of Appendix.

Drs. Richard H. Harte and Robert N. Wilson, Jr., exhibited speciments of a primary carcinoma limited to the vermiform appendix, from a woman 24 years of age, whose family history was negative. She had been well until 16 years of age, when she may have had chlorosis. When 19 she suffered from a severe pain in the right iliac region, and it was supposed she had an attack of appendicitis. Several months later she passed blood in the feces. When seen she had a persistent sharp pain over the region of the vermiform appendix, and also complained of a dull pain in the lumbar region. The blood-count was practically normal. The spleen was tender, but not enlarged. On December 2 a mass was found in the region of the appendix, which could be rolled around under the fingers. At this time the leucocytes were increased.

An operation was done at the Pennsylvania Hospital. In the appendix some fecal concretions were found, but for the most part the lumen was closed. The appendix was ligated and removed, and sections showed undoubted carcinomatous growth which had not begun to involve the neighboring strucstructures.

Dr. A. O. J. Kelly said he had seen several cases of carcinoma of the appendix. In these cases the lumen had mostly been patulous. In his opinion carcinomas of this organ may be more common than supposed.

Melanosis of Cerebrospinal Membranes in Rabies.

Drs. D. J. McCarthy and M. P. Ravenel exhibited specimens of melanosis of the cerebrospinal membranes in a case of rabies. The specimens were obtained from a cow dead of rabies. The cerebrospinal membranes were deeply pigmented, but he did not know how far down the cord the area extended. The pigmentation affected the pia, arachnoid and dura. Tests for iron gave negative results. Distinct endarteritis was also present.

Dr. David Riesman had seen similar black pigment in cerebrospinal membranes in the human subject, for the most part limited to the region of the medulla.

Injuries to the Brain.

Dr. Wm. S. Wadsworth read a paper on this subject, based on about sixty observations during the past two years. He pointed out the nature of the injuries resulting from direct and indirect violence, and said that in studying these cases one must consider the vital condition of the parts, e. g., of the nerve tissue, the membranes and the bones. The condition of the blood before and after the injury is also important. The character of the wound in some respects depends on the nature of the weapon, as for instance the wound resulting from an iron rod would be different from that of wood of the same weight and form. One must also study the condition of the blood-vessels, since in alcoholism there is less resistance of the blood-vessels and nerve tissue. This should be remembered, since, during the normal condition, there is a sort of physiologic massage kept up by the circulating blood. If the carotids are atheromatous a compensatory condition of the coronaries will also occur. In some cases the skull may be abnormally brittle, or abnormally thin, and hence injuries may more easily occur. He has found that by compressing the skull with the hands, from before backward, the foramen ovale can be made to change its shape quite readily in some cases. Should this occur suddenly during life the vital structures in the region will be compressed. In some instances hemorrhages may result from the blood-vessels somewhat removed from the seat of compression. Compression of this kind may follow blows on the chin. In the chronic insane, the bones of the skull are at times abnormally brittle, and in the intellectual the bones of the skull are frequently abnormally thin.

Dr. Wm. G. Spiller referred to a case of brain tumor in which the bone over the seat of the growth was considerably thickened.

Lenticular Carcinoma of the Skin.

Dr. M. B. Hartzell exhibited specimens of this affection on the right lower extremity. Its occurrence had been in the form of discrete nodules, for the most part distributed to the upper and inner surfaces of the thigh. They were usually about the size of a pea and slightly pinkish in color. Most of the growths were covered with a crust which, on being removed, left a small ulcer. One of the nodules appeared on the foot and sections seemed to prove that it was of a malignant character. The cells were for the most part large and oval, with large, deeply-staining nuclei. The protoplasm was poorly stained.

Dr. David Riesman thought the tumor rather peculiar, and in some respects resembling a sarcomatous structure. It did not appear to be made up of squamous epithelium, and may have originated in the hair follicles.

Dr. Jay F. Schamberg stated that usually lenticular carcinomas are secondary to carcinomas of the breast.

Tumors of Sciatic Nerve.

Dr. John B. Roberts presented specimens of multiple tumors of the sciatic nerve. The man from whom the growths were removed had for many years noticed them, some located in the popliteal space. He complained of excessive heat, and some sweating on the affected side. An operation was performed and some of the growths removed showed that they were of a myxomatous character.

CINCINNATI ACADEMY OF MEDICINE.

Meeting held February 25.

The president, Dr. Charles L. Bonnifield, in the chair.

Multiple Symmetrical Lipomata.

Dr. Horace J. Whitacre presented a male patient, aged 37, whose present trouble was first noticed about six years ago as swellings in the parotid region, appearing simultaneously; both sides of the neck and the groins were affected similarly, and at approximately the same time. Since this time these enlargements have appeared and disappeared about twice a year, and the patient himself ascribes the cure to large doses of whisky. The present tumors appeared a few months ago, and did not respond to the usual treatment. These swellings have never become inflamed and have never been painful. *Location:* parotid regions, over the mastoids, doubling the chin, in the mammary glands, on each side of the median line of the abdomen, in the inguinal regions, and in each popliteal space. Some of them are as large as a man's fist. The skin over the tumors below the neck is imperfectly movable and suggests the pig-skin dimpling of a lipoma. The nutrition of the man is excellent. *Blood examination:* reds and hemoglobin, normal; whites show a slight leucocytosis. On removing a piece of the tumor from one of the enlargements of the neck, and also from the groin, they were found to be composed of fatty tissue. The reporter seemed to think that the occurrence of these tumors symmetrically gave weight to the theory that they depend on some derangement of the trophic nervous system. As regards their appearance and disappearance, he stated that possibly, under the influence of the enormous doses of alcohol the patient ingested the trophic centers might have been stimulated to normal activity.

Glycosuria Due to Congenital Phimosis.

Dr. R. C. Jones considered this subject in a clerk aged 21. In the fall of 1899 he had a severe attack of scarlet fever, from which he did not convalesce very readily. He steadily lost flesh and strength, and on consulting a physician a few months later was informed that he had diabetes. Becoming no better at the end of three months, he consulted another, who confirmed the diagnosis, but was unable to help him in four months' treatment. During this period his weight fell from 143 to 124 pounds, his appetite became poor, he drank large quantities of water, and passed from five to seven pints of urine a day. Insomnia and despondency became marked. Urinalysis, as made by Dr. Jones, showed sugar, the passage of an average of six pints of urine a day, and a specific gravity of 1030. At the end of two weeks' treatment he was no better. At about that time the patient called his attention to a feeling of irritation and discomfort at the end of the penis, and on examination there was found a congenital phimosis, a soft tight prepuce, and a slight balanoposthitis. Circumcision was advised and performed, and within two weeks a marked improvement was noticed. All medication and dieting were stopped, and within four weeks the sugar had disappeared, specific gravity was 1017, the amount lowered to three pints a day, appetite improved, and his nervous symptoms had completely disappeared. Repeated examinations have failed to reveal the presence of sugar at any time, and in the interim he has gained eighteen pounds in weight.

Case of Appendicitis.

Dr. George B. Orr reported cases, one of which presented features of unusual interest, as follows: For three months before first seen the patient had complained of frequent attacks of nausea, irregular chills, followed by fever and sweats, loss of appetite and constipation, and constant severe pain internal to the iliac crest, which pain often extended to the knee. On physical examination he found marked tenderness over the entire right side of the abdomen, with swelling and fluctuation extending from Poupart's ligament upward and backward over the crest of the ilium to within three inches of the spinal column. He advised immediate operation, which was accepted. A posterior opening was first made and then an anterior one; through the latter was found an abscess cavity that reached from Poupart's ligament backward to very near the spinal column. The appendix could not be found, and no very lengthy search was made for it. About twenty ounces of pus were removed, and through-and-through drainage made. Healing occurred rapidly, with the exception of a small fecal fistula, which was lightly curetted on several occasions without success. He then had the patient put to bed, at complete rest, and had the bowels thoroughly moved. He was given nothing to eat but a teaspoonful of Wyeth's beef juice every two hours, and water in abundance. At the end of ten days the fistula healed entirely and has remained closed ever since.

Membranous Enteritis.

Dr. Mark A. Brown reported the case of Mrs. W., aged 28, married, well-developed and apparently well nourished. The duration of her present trouble is about nine months, her chief complaint: attacks of severe abdominal pain, colicky in character, followed by the appearance of mucus in the stools. Previous to an attack, usually the bowels were constipated, while immediately following, diarrhea supervened for several days, often followed by tenesmus. Gastric symptoms, such as nausea, anorexia, eructations and a sense of burning pain in the stomach always accompanied these attacks. Vomiting, too, was almost always present, and often fever of a mild grade. The duration of each attack was from four to five days, followed by a period of two weeks, during which she felt quite comfortable. In all she had lost between forty and fifty pounds in weight. Physical examination of the heart, lungs and abdomen was entirely negative, aside from slight tenderness in the epigastric region; there was no abdominal distension. Digital examination of the rectum was negative. The uterus was slightly prolapsed. The stools, during the time that she was at the hospital, were not more than one or two a day, usually coming with enemata, and consisting of fecal matter and mucus, the latter appearing in the form of strings (casts) a foot or more in length, or in smaller masses or clumps—the latter condition particularly after the use of nitrate of silver injections. These masses were shown to be of mucus, by means of the Ehrlich triacid stain. Under the microscope, the fibrillary nature of the deposits, together with the nucleated cells with tail-like extremity, resembling spermatoza, could be readily distinguished. She was sent to the Presbyterian Hospital, put at complete rest in bed, and upon a light (almost a milk) diet. Nitrate of silver injections, then boric acid injections were used without the slightest avail; the two were used alternately, but the patient was, if anything, worse. These medications were always used in the form of high enemata, the lower bowel having been previously evacuated by means of a simple enema. This plan of astringent injections was finally abandoned and daily high injections of olive-oil substituted. She was given these late in the morning or early in the afternoon and was able to retain them without discomfort for from twelve to twenty-four hours. Improvement was immediate under this plan; in three days no mucus could be detected in the stools, and in a week she was discharged from the hospital practically well. The olive-oil enemata were discontinued gradually. When next seen by the essayist, about three months later, she was entirely well, and had had not the slightest sign of recurrence. She had steadily increased in weight.

Leucoplakia Linguae.

Dr. M. L. Heidingsfeld demonstrated, from lantern slides, a case of leucoplakia linguæ of ten years duration, in an individual infected with syphilis, the latter of twenty years' duration. Some of the leucoplakia areas were the size and thickness of a split butter-bean, and a radical surgical extirpation was made of these in November, 1900. Pathologic examination revealed the condition to be distinctly pre-epitheliomatous in character—marked proliferation and down-growth of the epidermis and areas of degeneration with a nest-like arrangement of the epithelium. A good wall of connective tissue separated it from underlying structures. A cellular infiltration was nowhere evident, and the only pathologic evidence of syphilis was an endarteritis obliterans.

Venereal Warts of Tongue.

DR. **HEIDINGSFELD** also showed, by means of lantern slides, specimens of extragenital venereal warts of the tongue, taken from a case shown at the Academy Nov. 28, 1900. Some exception was taken to the diagnosis at that time, but the pathologic examination has revealed the lesions to be typical venereal warts corresponding in appearance and structure to the same lesions on the genitals of the case in question. He also reported another case with the same distribution, showing the same pathologic structure, which case had recently come under his notice.

Accident Attending the Adenoid Operation.

DR. C. R. **HOLMES** reported a case in which the sharp blade of the Gottstein curette became broken off at the beginning of an operation for adenoids. The blade was abstracted from the pharynx with the greatest difficulty. Since that time he has had an instrument made, after a design of his own, by which the cutting blade is greatly reinforced, and can consequently bear a greatly increased pressure.

DR. **STOWE GARLICH** reported a similar accident, but the broken piece was swallowed. Fortunately it was passed in the stools a few days later, without apparently causing any damage.

Adenomatous Hyperplasia of the Rectal Mucosa.

DR. A. J. **WHITACRE** presented a case of adenomatous hyperplasia of the rectum in a woman aged 63, which tumor had existed for about four years. He also described a new operation for removal of growths in this region with but a minimum blood loss.

Multiple Abscesses of the Liver Following Latent Appendicitis.

DR. **GEORGE P. DALE** gave the history of this case. Throughout the patient's two months in the hospital it was one of sepsis with no localizing symptoms, so that he came to the post-mortem without a positive diagnosis having been made. At autopsy the chest showed nothing abnormal. The cecum was bound down by adhesions and imbedded in a mass of greenish, foul-smelling pus. The abscess was well walled off from the general peritoneal cavity. The stump of the appendix was all remaining of that organ. The liver was about 2½ times as large as normal, and the seat of multiple abscesses of various sizes, the largest being about 1½ inches in diameter. The kidneys were much reduced in size, with granular surfaces and adherent capsules. Scattered throughout the cortices were numerous small embolic abscesses, not yet broken down. The cortex was about one-third its normal width.

Aneurysm of the Abdominal Aorta.

DR. **GEORGE P. DALE** said that a diagnosis was not made in this case as there were no localizing symptoms. Indeed, the man was thought to be suffering from phthisis, and numerous examinations of his sputum were made with negative results as far as the finding of tubercle bacilli were concerned. Death was sudden. Autopsy showed the right ventricle dilated and empty, the left much contracted. In the diaphragm, two inches from the median line to the left, was a perforation easily admitting a finger, the edges ragged. The left pleura contained a large amount of clotted blood and about a pint of semifluid blood. The abdominal aorta, beginning just below the diaphragm, was transformed into a sac, adherent to the vertebræ, diaphragm, liver and stomach: the tenth, eleventh and twelfth dorsal and first and second lumbar vertebræ were eroded, both the bone and cartilage. The aneurysmal sac was covered anteriorly by the liver. The latter was much deformed and covered with puckered scars, in all probability due to syphilis. Rupture had occurred into the left pleura through the opening mentioned.

Aneurysm of the Innominate; Ligation of Common Carotid and Subclavian; Disappearance of Tumor for Sixteen Months; Return.

DR. **JOSEPH RANSOHOFF** presented a patient on whom he had operated about sixteen months previously, for the relief of this condition. The returning tumor has not yet grown to any great size.

PHILADELPHIA ACADEMY OF SURGERY.

Meeting held March 4.

President Dr. DeForest Willard in the chair.

Compound Fractures of the Skull.

DR. **RICHARD H. HARTE** read a paper entitled "Some Observations on Compound Fractures of the Skull." He considers the diagnosis of fracture of the vault as sometimes easy if the wound extends down to the bone, though in some cases a roughness of the bone simulates a fracture, after an incision becomes necessary to clear up the diagnosis, and in such cases he believes it always justifiable. Children frequently suffer from fracture of the bones of the skull, which are never recognized. Simple incised wounds are sometimes mistaken for fractures. As to fractures of the base, an accident of this kind may be caused by a fall on the back of the head, in such cases involving the posterior fossa. Fractures of the anterior fossa may involve the cribriform plate, or petrous portion of the temporal bone. The prognosis of fractures at the base of the skull depends on the nature of the injury. If the brain substance has been injured the prognosis is more unfavorable. The diagnosis of fracture of the base of the skull may be made by the escape of blood from the eyes, or ears, and by the impairment of nerves of special sense. The speaker recalled an instance in which a small amount of brain tissue had been lost in such an injury. When a mixture of blood and cerebrospinal fluid occurs, it may be ascertained by rubbing a small amount of the fluid between the fingers. If any cerebrospinal fluid is present its character will be noticed, while if it is only blood, it will become sticky. The nerves of special sense may be injured at their origin, or along their course and may be from compression. The presence of coma is not always diagnostic of fracture of the base of the skull. Coma should not be ascribed to alcoholism. In alcoholism the temperature is normal. Of the speaker's series of fractures of the base of the skull, about 30 per cent. had recovered.

As to the treatment, rest in bed, with ice to the head and an antiseptic dressing, together with the internal administration of calomel and Dover's powders, seemed to give the best results. When depression is present the case becomes at once an operable one. Even in doubtful cases an exploratory incision should be done. If the wound becomes infected a drainage-tube should be inserted to a point just below the depth of the bone. Of the twenty-three operable cases of fracture of the skull seen by the speaker, 11.5 per cent. died.

DR. **JOHN B. DEAVER** expressed belief that the results obtained by Dr. Harte in the treatment of this series of cases had been good.

Neuropathic Affections of Bones.

DR. C. H. **FRAZIER** presented a patient showing a peculiar neuropathic affection of the bones, with skiagraphs. The patient was a man 60 years of age. Three years ago he had complained of pain in the right knee, accompanied by swelling. Skiagraphs show osteophytes growing from the articular cartilages. The process has also involved the left knee. The special features of the case are that it is a bilateral affection having lasted for years, and with no tendency to involve other bones. The case resembles osteosclerosis, rather than osteoporosis, or it might properly be classified as one of osteitis deformans.

Left Cecal Hernia.

Dr. John H. Gibbon read a paper entitled "Left Cecal Hernia, with Report of Two Cases." He believes that this condition occurs more frequently than has been supposed, since it has not been the practice to open the sac. More recently certain operators have met with the condition repeatedly. In the first case, the man suffered with hernia for years, and later strangulation occurred. On opening the sac both the cecum and ilium could be easily seen. The patient recovered from the operation, but later died, probably of heart disease.

The second patient was a laborer, 55 years of age, who had suffered from a hernia extending almost to the knee. Dr. W. W. Keen operated, by aid of spinal anesthesia. Two days afterward the man developed stricture of the urethra, and later died of symptoms of sepsis, probably of kidney origin. The speaker considers cecal hernia very rare in women, and the most frequent cause of the condition an abnormally long mesocolon.

Obstructive Jaundice.

Dr. John B. Deaver read a paper on "Mortality in Operations for Obstructive Jaundice." He enumerated the causes of the condition as outlined by Murchison and Osler. Peritonitis is not a common cause of death in obstructive jaundice. The effects of the bile salts on the blood seem to increase the tendency to excessive bleeding, and to secondary hemorrhage. He lost a case from secondary hemorrhage following an operation for this condition. To lessen the tendency toward this condition he gave calcium chlorid, but could not speak definitely as to its effects. Suprarenal extract in one case did good. Hemorrhage and shock are common causes of death. These facts seem to indicate that the sooner an operation is done the better will be the prognosis. It is better to open the abdomen and find nothing wrong than to wait until later and then find an irremediable condition.

Dr. J. H. Gibbon asked the speaker whether he had ever met with a case of acute dilatation of the stomach in these operations.

Dr. R. G. Le Conte asked whether he had ever tried gelatin to lessen the tendency to hemorrhage.

Dr. Deaver stated that when there is dilatation of the stomach it is the result of the general septic condition. He has not tried gelatin.

Enterectomy in Strangulated Hernia.

Dr. T. S. K. Morton reported "A Case of Strangulated Femoral Hernia; Herniotomy; Acute Obstruction Three Weeks Later; Enterectomy: Recovery." In this case taxis had been tried before the patient was seen by the speaker, but without result. He did herniotomy, and replaced the bowel. A few days later abdominal colic occurred, and three weeks later there were symptoms of obstruction. He opened the abdomen and found an obstruction. Enterectomy was done by means of the Downes forceps. About eight inches of the bowel was removed and the patient made a good recovery.

Dr. John B. Deaver stated that he had often thought that the white line, as found at the time of herniotomy, might be the subsequent seat of obstruction of the bowel, owing probably to cicatricial tissue formation at that spot.

Suppurating Hematocele.

Dr. George Erety Shoemaker read a paper entitled "Treatment of Suppurating Hematocele Following Extra-uterine Pregnancy." In doing this operation he prefers the abdominal route. Pelvic hematocele can, however, be best drained through the vagina.

CALIFORNIA ACADEMY OF MEDICINE.

Meeting held February 26.

Appendicitis During Typhoid.

Dr. Beverly MacMonagle reported two cases of appendicitis operated on during the course of typhoid fever. The first was in a young man of 18, who, at the end of the second week of a typical attack of typhoid, suddenly complained of a severe pain in the right iliac region, and the temperature rose to 105. The Doctor was called in consultation the same day, and found considerable general tenderness, decidedly increased in the right iliac region, with muscles tense to the point of spasm on slight pressure, and apparent increased dulness in the groin. Rectal examination showed decided tenderness in the rectovesical cul-de-sac, particularly on the right side. The spleen was enlarged, the liver dulness normal. A blood count showed a leucocytosis of 17,000. Abdominal section was determined on; the only question being between perforation and appendicitis. The appendix was removed. The temperature came down to 103 and the pulse to 110 the following day. The patient went through the usual course of typhoid to recovery. The anesthetic and operation did not seem to add any additional trials to his case.

The second case occurred in a man 27 years of age. Nineteen days from the commencement of his typhoid he had a chill, and began to vomit and suffer severe pain in the abdomen. Temperature went up to 105, pulse 156, respiration 38. The abdomen was tense and tender, with rigid muscles over the right iliac region. While he could not detect dulness, he thought he could feel some thickening over the appendix. Incision was made and the appendix removed. Temperature in twelve hours was 102, the bowels moved and the stools had the appearance of containing blood. The patient vomited a good deal and the pulse was not satisfactory. On the second day after operation vomiting ceased and the patient was more comfortable, the pulse and temperature much the same. The third day a blood count showed leucocytosis of 19,000, pulse and temperature were the same, and the bowels moved freely. On the fourth day the temperature was 104, pulse 142, respiration 34, with a slight chilly feeling, and some pain in the seat of operation. Examination showed pus in the abdominal wound, which was evacuated, when the temperature and pulse fell. After this the patient progressed very well, the abdominal incision discharging pus for twenty-two days, when it closed and convalescence was established.

Dr. W. W. Kerr said that the combination of the two diseases was by no means uncommon. He had had two such cases, one a perforation close to the end of the appendix, with ulceration extending down into the appendix itself. He thought it a question whether we should recommend operation as promptly as in cases where typhoid did not exist. The presence of typhoid should make us more cautious.

Dr. J. Henry Barbat said he was particularly interested in these reports because a man on whom he recently operated had typhoid fever nine months before. His attack then looked like appendicitis, but a diagnosis of typhoid was made. He never got entirely well, but had pain in the right side at times. Recently he had an attack of gall-stone colic, for which he operated, removing a small stone, and found the appendix very firmly bound down by adhesions, which made it very difficult of removal. It is reasonable to suppose that he had an appendicitis along with his typhoid.

Dr. T. W. Huntington said that the coexistence of the two diseases has long been recognized. There can be no question regarding the propriety of operating in these, for the patients stand operation very well. He considers the blood count of special value in determining the existence of appendicitis.

Dr. George M. Hughes said that patients having typhoid react well from operation. He has seen several operated on for perforation, and, where ether was used, the patients came off the table with better pulses than before. He thinks we should operate in all cases of appendicitis complicating typhoid. We may be in doubt as to whether pain is due to appendicitis or typhoid ulcer, but operation will add no danger for the patient, and it would be better to err on the safe side and operate.

Dr. MacMonagle said that this was the extent of his experience in such cases. The question was whether one should operate in cases in which the pain became very severe, with poor pulse, shallow respiration and vomiting. The question of perforation was left out, because the temperature went so high.

Carcinoma of the Pylorus and Stomach.

Dr. T. W. Huntington exhibited a specimen showing the result of an operation for carcinoma of the pylorus and of the stomach. On Aug. 5, 1900, pylorectomy and partial gastrectomy was performed upon a man 67 years old. At the time of operation the pylorus was almost entirely obstructed by the growth. After removal of the pylorus and a considerable portion of the stomach, the divided end of the duodenum was attached to the posterior wall of the stomach by a Murphy button. There was rapid recovery from the operation. For three months the patient gained perceptibly; his weight increased 35 pounds; he ate a promiscuous diet with relish. He then began to fail, with a recurrence of former symptoms, and died Dec. 24, 1900, nearly five months after the operation. At autopsy, there was extensive carcinomatous involvement of the stomach along the lesser curvature, and at the point of anastomosis, also of the liver and pancreas.

Dr. MacMonagle said that it was a question whether or not the doctor should have taken out more of the stomach. He has had one successful and one unsuccessful case. In his fatal one he had not taken out a sufficient number of glands. He thinks statistics show that the result is as good in gastroenterostomy as in total removal of the stomach. In this specimen of Dr. Huntington's the union showed that the stomach had attained its original condition of strength. Recurrence was beyond prevention.

Dr. Barbat said that in the majority of successful cases the anastomosis is made with the Murphy button; it saves time if properly applied, prevents leakage, and in general gives a better and safer result, and had the doctor cut wider the patient might have lived longer.

Dr. W. I. Terry said that the autopsy demonstrated the fact that the liver was full of carcinomatous masses, and he can not believe that any further operation or wider cut could have been of any avail. Regarding the anastomosis, he thinks the button was a success in this case.

Dr. Carpenter called attention to a point in the technic, which was to remove as much of the lesser omentum as possible, because the circulation is up and through the lesser omentum.

Dr. Huntington said he was rather pessimistic regarding the possibility of a radical cure in these cases, because it is very seldom that the disease has not involved other organs. He recognizes the superior ability of one man over another in using the button, and thinks that when the reports are all in, an appalling list of tragedies will be found to be due to the button. Richardson prefers the suture, and has never used the button successfully. The matter must rest for a considerable time. The button can certainly be adjusted more rapidly, and will be used where haste is necessary.

Carcinoma of Breast.

Dr. T. W. Huntington also exhibited a breast removed recently. It showed a discrete carcinomatous map occupying nearly the center of the breast. This tumor was about the size of a lemon. It was quite movable and, externally, no axillary glands could be detected. A full Halsted operation was done. Upon entering the axilla a large number of infiltrated glands were uncovered.

Case of Leprosy.

Dr. Jos. G. Morrissey exhibited a boy 11 years of age who had leprosy. He was born in the Tahiti Islands. His father was French and his mother a native woman of French descent. There was no history of leprosy in the family. He came to San Francisco three months ago. with his father. He was first seen by Dr. C. F. Griffin, who reported the case to the health officer. He had several patches, on various parts of the body, of well-marked anesthesia, one spot alongside of the left eye, through which a pin could be passed without his feeling it. Both ears were involved, also the fingers; and the large toe of the left foot was half gone. The disease was of the nodular type. Lepra bacilli had been found, both in the blood and in the sections of tissue taken from the lesions. The diagnosis had been confirmed by Drs. Montgomery, Ophuls and Morrow. The boy's general health did not seem to be impaired, as he was quite active. The disease began about three years ago.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Prostatic Hypertrophy.

Dr. R. Guitéras, in his article on treatment of prostatic hypertrophy, in the *New York Medical Journal*, states that belladonna is the best antispasmodic, although codein and hyoscyamus are preferred by many. He recommends the following:

℞.	Tinct. belladonnæ	ʒii	8	
	Potassii acetatis	ʒiv	16	
	Aq. menthæ pip. q. s. ad	℥ii	64	

M. Sig.: One teaspoonful three times a day between meals.

Another prescription for the same purpose he advises as follows:

℞.	Codeinæ	gr. viii		5
	Tinct. belladonnæ	ʒiiss	10	
	Potassii acetatis	ʒiv	16	
	Aq. menth. pip. q. s. ad	℥ii	64	

M. Sig.: One teaspoonful three times a day in a glass of water.

In some cases, he states, it will be necessary to resort to a suppository at night in order to give the patients the desired relief. Under such circumstances the following is recommended:

℞.	Ext. belladonnæ			
	Morphinæ sulphatis, āā	gr. 1/4		015
	Cacao butter q. s.			

Hot rectal douches of saline solution before going to bed and the administration of some of the bladder antiseptics are also of benefit.

Acute Laryngitis in Children.

℞.	Apomorphinæ hydrochlor.	gr. 1/3		02
	Acidi hydrochlor. dil.	gtt. iii		19
	Syrupi senegæ	ʒv	20	

M. Sig.: One teaspoonful every hour.

Treatment of Subacute Laryngitis of Vocalists.

Faulkner, in *Clinical Ther.*, outlines the following treatment:

1. An aperient.
2. Laryngeal spray of 1 per cent. solution of cocain.
3. The following lozenges may be of use:

℞.	Morphinæ bimeconatis	gr. 1/100		0006
	Cocainæ hydrochloratis	gr. 1/125		0005
	Tinct. aconiti	m. 1/6		01
	Pulv. altheæ rad.	gr. ss		03

M. Ft. lozenge No. i. Sig.: One to be taken in the mouth frequently.

4. As a preparation for a vocal effort, after acute symptoms have subsided, strychnia—gr. 1/60 three times a day—is of service.

Pleurisy with Effusion in Children.

Widerhofer, in *Yeo's Man. of Ther.*, recommends the following:

℞.	Potassii acetatis	gr. xx-xl	1	33-2.66
	Syrupi simplicis	ʒiii	12	
	Infusi digitalis q. s. ad	℥iii	96	

M. Sig.: One teaspoonful every two hours.

Or,

℞.	Potassii acetatis	gr. xx-lx	1	33-4
	Syr. aurantii	ʒiii	12	
	Decoct. cinchonæ q. s. ad	℥iii	96	

M. Sig.: One teaspoonful every two hours.

As external application he recommends the following:

℞.	Iodi	gr. iss		09
	Potassii iodidi	ʒiiss	10	
	Glycerini	℥iss	48	

M. Ft. linimentum. Sig.: For external application once or twice daily.

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Meeting held February 26.

Appendicitis During Typhoid.

Dr. Beverly MacMonagle reported two cases of appendicitis operated on during the course of typhoid fever. The first was in a young man of 18, who, at the end of the second week of a typical attack of typhoid, suddenly complained of a severe pain in the right iliac region, and the temperature rose to 105. The Doctor was called in consultation the same day, and found considerable general tenderness, decidedly increased in the right iliac region, with muscles tense to the point of spasm on slight pressure, and apparent increased dulness in the groin. Rectal examination showed decided tenderness in the rectovesical cul-de-sac, particularly on the right side. The spleen was enlarged, the liver dulness normal. A blood count showed a leucocytosis of 17,000. Abdominal section was determined on; the only question being between perforation and appendicitis. The appendix was removed. The temperature came down to 103 and the pulse to 110 the following day. The patient went through the usual course of typhoid to recovery. The anesthetic and operation did not seem to add any additional trials to his case.

The second case occurred in a man 27 years of age. Nineteen days from the commencement of his typhoid he had a chill, and began to vomit and suffer severe pain in the abdomen. Temperature went up to 105, pulse 156, respiration 38. The abdomen was tense and tender, with rigid muscles over the right iliac region. While he could not detect dulness, he thought he could feel some thickening over the appendix. Incision was made and the appendix removed. Temperature in twelve hours was 102, the bowels moved and the stools had the appearance of containing blood. The patient vomited a good deal and the pulse was not satisfactory. On the second day after operation vomiting ceased and the patient was more comfortable, the pulse and temperature much the same. The third day a blood count showed leucocytosis of 19,000, pulse and temperature were the same, and the bowels moved freely. On the fourth day the temperature was 104, pulse 142, respiration 34, with a slight chilly feeling, and some pain in the seat of operation. Examination showed pus in the abdominal wound, which was evacuated, when the temperature and pulse fell. After this the patient progressed very well, the abdominal incision discharging pus for twenty-two days, when it closed and convalescence was established.

Dr. W. W. Kerr said that the combination of the two diseases was by no means uncommon. He had had two such cases, one a perforation close to the end of the appendix, with ulceration extending down into the appendix itself. He thought it a question whether we should recommend operation as promptly as in cases where typhoid did not exist. The presence of typhoid should make us more cautious.

Dr. J. Henry Barbat said he was particularly interested in these reports because a man on whom he recently operated had typhoid fever nine months before. His attack then looked like appendicitis, but a diagnosis of typhoid was made. He never got entirely well, but had pain in the right side at times. Recently he had an attack of gall-stone colic, for which he operated, removing a small stone, and found the appendix very firmly bound down by adhesions, which made it very difficult of removal. It is reasonable to suppose that he had an appendicitis along with his typhoid.

Dr. T. W. Huntington said that the coexistence of the two diseases has long been recognized. There can be no question regarding the propriety of operating in these, for the patients stand operation very well. He considers the blood count of special value in determining the existence of appendicitis.

Dr. George M. Hughes said that patients having typhoid react well from operation. He has seen several operated on for perforation, and, where ether was used, the patients came off the table with better pulses than before. He thinks we should operate in all cases of appendicitis complicating typhoid. We may be in doubt as to whether pain is due to appendicitis or typhoid ulcer, but operation will add no danger for the patient, and it would be better to err on the safe side and operate.

Dr. MacMonagle said that this was the extent of his experience in such cases. The question was whether one should operate in cases in which the pain became very severe, with poor pulse, shallow respiration and vomiting. The question of perforation was left out, because the temperature went so high.

Carcinoma of the Pylorus and Stomach.

Dr. T. W. Huntington exhibited a specimen showing the result of an operation for carcinoma of the pylorus and of the stomach. On Aug. 5, 1900, pylorectomy and partial gastrectomy was performed upon a man 67 years old. At the time of operation the pylorus was almost entirely obstructed by the growth. After removal of the pylorus and a considerable portion of the stomach, the divided end of the duodenum was attached to the posterior wall of the stomach by a Murphy button. There was rapid recovery from the operation. For three months the patient gained perceptibly; his weight increased 35 pounds; he ate a promiscuous diet with relish. He then began to fail, with a recurrence of former symptoms, and died Dec. 24, 1900, nearly five months after the operation. At autopsy, there was extensive carcinomatous involvement of the stomach along the lesser curvature, and at the point of anastomosis, also of the liver and pancreas.

Dr. MacMonagle said that it was a question whether or not the doctor should have taken out more of the stomach. He has had one successful and one unsuccessful case. In his fatal one he had not taken out a sufficient number of glands. He thinks statistics show that the result is as good in gastroenterostomy as in total removal of the stomach. In this specimen of Dr. Huntington's the union showed that the stomach had attained its original condition of strength. Recurrence was beyond prevention.

Dr. Barbat said that in the majority of successful cases the anastomosis is made with the Murphy button; it saves time if properly applied, prevents leakage, and in general gives a better and safer result, and had the doctor cut wider the patient might have lived longer.

Dr. W. I. Terry said that the autopsy demonstrated the fact that the liver was full of carcinomatous masses, and he can not believe that any further operation or wider cut could have been of any avail. Regarding the anastomosis, he thinks the button was a success in this case.

Dr. Carpenter called attention to a point in the technic, which was to remove as much of the lesser omentum as possible, because the circulation is up and through the lesser omentum.

Dr. Huntington said he was rather pessimistic regarding the possibility of a radical cure in these cases, because it is very seldom that the disease has not involved other organs. He recognizes the superior ability of one man over another in using the button, and thinks that when the reports are all in, an appalling list of tragedies will be found to be due to the button. Richardson prefers the suture, and has never used the button successfully. The matter must rest for a considerable time. The button can certainly be adjusted more rapidly, and will be used where haste is necessary.

Carcinoma of Breast.

Dr. T. W. Huntington also exhibited a breast removed recently. It showed a discrete carcinomatous map occupying nearly the center of the breast. This tumor was about the size of a lemon. It was quite movable and, externally, no axillary glands could be detected. A full Halsted operation was done. Upon entering the axilla a large number of infiltrated glands were uncovered.

Case of Leprosy.

Dr. Jos. G. Morrissey exhibited a boy 11 years of age who had leprosy. He was born in the Tahiti Islands. His father was French and his mother a native woman of French descent. There was no history of leprosy in the family. He came to San Francisco three months ago. with his father. He was first seen by Dr. C. F. Griffin, who reported the case to the health officer. He had several patches, on various parts of the body, of well-marked anesthesia, one spot alongside of the left eye, through which a pin could be passed without his feeling it. Both ears were involved, also the fingers; and the large toe of the left foot was half gone. The disease was of the nodular type. Lepra bacilli had been found, both in the blood and in the sections of tissue taken from the lesions. The diagnosis had been confirmed by Drs. Montgomery, Ophuls and Morrow. The boy's general health did not seem to be impaired, as he was quite active. The disease began about three years ago.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Prostatic Hypertrophy.

Dr. R. Guitéras, in his article on treatment of prostatic hypertrophy, in the *New York Medical Journal*, states that belladonna is the best antispasmodic, although codein and hyoscyamus are preferred by many. He recommends the following:

℞. Tinct. belladonnæ ....ʒii 8|
Potassii acetatis ....ʒiv 16|
Aq. menthæ pip. q. s. ad..............℥ii 64|
M. Sig.: One teaspoonful three times a day between meals.

Another prescription for the same purpose he advises as follows:

℞. Codeinæ ....gr. viii |5
Tinct. belladonnæ ....ʒiiss 10|
Potassii acetatis ....ʒiv 16|
Aq. menth. pip. q. s. ad..............℥ii 64|
M. Sig.: One teaspoonful three times a day in a glass of water.

In some cases, he states, it will be necessary to resort to a suppository at night in order to give the patients the desired relief. Under such circumstances the following is recommended:

℞. Ext. belladonnæ
Morphinæ sulphatis, āā..........gr. 1/4 |015
Cacao butter q. s.
Hot rectal douches of saline solution before going to bed and the administration of some of the bladder antiseptics are also of benefit.

Acute Laryngitis in Children.

℞. Apomorphinæ hydrochlor..........gr. 1/3 |02
Acidi hydrochlor. dil................gtt. iii |19
Syrupi senegæ ....ʒv 20|
M. Sig.: One teaspoonful every hour.

Treatment of Subacute Laryngitis of Vocalists.

Faulkner, in *Clinical Ther.*, outlines the following treatment:

1. An aperient.
2. Laryngeal spray of 1 per cent. solution of cocain.
3. The following lozenges may be of use:

℞. Morphinæ bimeconatis ....gr. 1/100 |0006
Cocainæ hydrochloratis ....gr. 1/125 |0005
Tinct. aconiti ....m. 1/6 |01
Pulv. altheæ rad...................gr. ss |03
M. Ft. lozenge No. i. Sig.: One to be taken in the mouth frequently.

4. As a preparation for a vocal effort, after acute symptoms have subsided, strychnia—gr. 1/60 three times a day—is of service.

Pleurisy with Effusion in Children.

Widerhofer, in *Yeo's Man. of Ther.*, recommends the following:

℞. Potassii acetatis ....gr. xx-xl 1|33-2.66
Syrupi simplicis ....ʒiii 12|
Infusi digitalis q. s. ad..............℥iii 96|
M. Sig.: One teaspoonful every two hours.
Or,
℞. Potassii acetatis ....gr. xx-lx 1|33-4
Syr. aurantii ....ʒiii 12|
Decoct. cinchonæ q. s. ad............℥iii 96|
M. Sig.: One teaspoonful every two hours.

As external application he recommends the following:

℞. Iodi ....gr. iss |09
Potassii iodidi ....ʒiiss 10|
Glycerini ....℥iss 48|
M. Ft. linimentum. Sig.: For external application once or twice daily.

Treatment of Hemoptysis.

Dr. W. George Smith, as noted in *Ther. Gazette*, states that in an urgent case of hemoptysis, 1, the patient should be kept calm and the excitement of his friends quieted with a few judicious words by emphasizing the fact that hemorrhage per se is not a serious matter; 2, avoid irritation of the gastric ends of the vagus nerve. Therefore do not administer pieces of ice or cold drinks, as they irritate the gastric branches of the vagus, give rise to cough and thus aggravate the bleeding, as well as cause contractions of the stomach. On the other hand, give warm, mucilaginous drinks and place ice on the chest; 3, keep the patient quiet in mind and body; 4, give morphin hypodermically. The latter is the best thing of all; 5, relieve the bowels by magnesium sulphate or by calomel; 6, let diet be simple and nutritious, reduce the amount of liquid and give no alcohol.

For Cold in the Head.

The following powder will relieve the congestion and act as a palliative to the mucous membrane of the nose:

℞.	Menthol	gr. iii		20
	Acidi borici	ʒi	4	
	Bismuthi subcarb.	ʒiss	6	
	Benzoin	ʒiss	6	
	Sodii bicarb.	gr. x		66
	Magnesii carb.	gr. xv	1	
	Sacchari lactis	℥i	32	

M. Sig.: Use as an insufflation into the nose four or five times a day.

For the Cough in Phthisis.

According to the *St. Louis Med. Jour.*, Weisenburg employs with success the following combination in cough due to tubercular ulceration of the epiglottis:

℞.	Dionin hydrochlor.			
	Codeinæ hydrochlor., āā	gr. iss		10
	Cocainæ hydrochlor.	gr. iv		25
	Ammon. valer.			
	Aquæ amygdalæ amaræ, āā	ʒii	8	

M. Sig.: Fifteen drops on a lump of sugar three or four times a day. Allow the sugar to dissolve slowly in the back part of the pharynx.

Ichthyol in Treatment of Deep-Seated Inflammations.

W. T. Slevin, in *N. Y. Med. Jour.*, emphasizes the value of the following ointment in deep-seated, as well as superficial, inflammations:

℞.	Ichthyol			
	Plumbi iodidi, āā	gr. xlv	3	
	Ammonii chloridi	gr. x		66
	Petrolati q. s. ad	℥i	32	

M. Sig.: To be rubbed thoroughly upon the inflamed parts.

The Use of Normal Saline Solution.

The *Ther. Gazette* states that some of the conditions in which the normal saline solution is of value are: Hemorrhage, surgical shock, toxemia from sepsis or any of the infectious diseases, puerperal eclampsia, renal disease, diabetic coma, poisoning by the various alkaloids, snake poisoning, etc. In children so small a quantity as one or two ounces is sufficient, and four ounces will often be of value in adults. It is a noteworthy fact that the urinary flow may be three or four times as great as the quantity actually injected. The best place for the injection is in the lateral lumbar region. A very common fault is the employment of water not hot enough. The water may be kept at the proper temperature by coiling a section of the tube several times in a basin of very hot water, which may be renewed at times. The water as it is delivered to the patient should be from 105 to 106 F.

Parotitis (Mumps).

In children, the following combination renders good service in treatment of the febrile stage:

℞.	Liq. ammonii acetatis	℥ss	16	
	Spts. etheris nitrosi	ʒii	8	
	Aq. menthæ pip. q. s. ad	℥iii	96	

M. Sig: One teasponful every two or three hours for a child er five years of age.

Treatment of Epilepsy.

Collins, in the "System of Pract. Ther.," states that in some cases of epilepsy the bromids, if given in combination with an acid, are not so apt to derange digestion. He recommends the following combination:

℞.	Acidi hydrobrom. dil.	m. x		66
	Ferri bromidi	gr. i		06
	Potassii bromidi	gr. x		66
	Sodii salicylatis	gr. ii		12
	Spts. rectificat.			
	Glycerol pepsini, āā	m. x		66
	Ol. gaultheriæ	m. ss		03
	Liq. ammon. cit. (B. P.)	ʒss	2	

M. Sig.: At one dose. This may be doubled or tripled.

Peruol in Treatment of Scabies.

Richards Sachs, in *Deutsche Med. Woch.*, states that the best treatment consists in employing a preparation that will produce no bad effects upon the skin or other organs, that does not discolor the skin or clothes and one that has no odor. He claims that peruol has none of these disadvantages, which can not be claimed for many of the other preparations commonly used. Peruol, he states, will kill the acarus in thirty minutes. This preparation is composed of peruscabin (the principal active constituent of Peru balsam) one part, and oleum ricini three parts. Three applications should be given within thirty-six hours, and well rubbed in, when a cure is usually effected. Any eczema or dermatitis present is not rendered worse by the application of this preparation.

Treatment of Hemoglobinuria.

Dr. N. S. Davis, Jr., states that, when there is an excessive elimination of mineral salts by the urine and consequently a diminished amount in the blood, Robin advises a diet rich in such mineral matter and the administration of the following powder twice daily:

℞.	Sodii chloridi	gr. v		3
	Potassii chloridi	gr. ivss		26
	Sodii phosphatis	gr. i		06
	Potassii phosphatis	gr. iiss		15
	Calcii glycerophosphatis	gr. ss		03
	Magnesii glycerophosphatis	gr. 1/6		01
	Potassii sulphatis	gr. ss		03
	Ferri glycerophosphatis	gr. i		06
	Pulv. hemoglobin	gr. i		06

M. Ft. chartula No. i. Sig.: One such powder twice a day.

Treatment of Tinea Tonsurans.

Dr. Brown, in *The Post-Graduate*, recommends:

℞.	Acidi salicyl.	gr. xx	1	33
	Chrysarobin	gr. xx	1	33
	Ichthyol	ʒi	4	
	Lanolin			
	Vaselini, āā	℥ss	16	

M. Sig.: Shave the parts and rub it over the whole surface. At the end of three days the head should be washed and some emollient salve applied to check the dermatitis. In a few days the former salve may be re-applied. The treatment should be kept up for a month or six weeks.

Seborrheic Eczema.

Dr. Brown also states that resorcin and sulphur are the most valuable agents in treatment of seborrheic eczema. He recommends the following:

℞.	Hydrarg. chloridi corros.	gr. i		06
	Resorcin	ʒi	4	
	Chloralis hydratis	ʒi	4	
	Ol. ricini	gr. x		66
	Spts. vini	℥iv	128	

M. Ft. lotio. Sig.: Apply to the scalp once or twice daily.

In more severe grades, with redness and infiltration of the scalp, a pomade such as the following serves the purpose better:

℞.	Acidi salicyl.	gr. xv	1	
	Resorcin	gr. xxv	1	66
	Sulphuris sublim.	ʒi	4	
	Ung. aquæ rosæ	℥i	32	

M. Sig.: Apply locally.

Scrofulosis.

Chrystie, in "System of Pract. Ther.," places cod-liver oil first in the list of medicinal agents in treatment of scrofulosis. He recommends the following excellent emulsions:

R.	Olei morrhuæ	℥vi	192
	Olei gaultheriæ	ʒi	4
	Mucilag. tragacanthæ	℥ii	64
	Aq. aurantii flor. q. s. ad	℥xii	384

M. Sig.: From a dessertspoonful to a tablespoonful three times a day.

Or,

℞.	Ol. morrhuæ	℥vi	192
	Ol. gaultheriæ	ʒi	4
	Spts. chloroformi	ʒii	8
	Glycerini		
	Yolk of egg, āā	ʒv	20
	Aq. aurantii flor. q. s. ad	℥xii	384

M. Sig.: One dessertspoonful to a tablespoonful three times a day. The second mixture is not so thick as the first and is, for that reason, preferred.

Administration of Iodoform.

According to *Presse Med.*, Thibaut combines iodoform with equal parts of pulverized Ceylon cinnamon for external use or pills. As a salve he uses the following:

℞.	Iodoformi	gr. xv	1	
	Essentiæ cinnamomi Zeylanici	m. v		30
	Vaselini	ʒv	20	

M. Sig.: For local application.

Medicolegal.

Experiments in Nature of Hearsay Evidence.—The Supreme Court of Louisiana holds, in the case of Seibert vs. McManus, that experiments made in the absence of parties interested in the results thereof are, as evidence, in the nature of hearsay, and, if received, the facts and conditions under which they were made should be shown to have been identical with those of the case before the court.

Failure to Call Physicians as Witnesses.—It appeared from the testimony in the personal injury case of Vergin vs. the City of Saginaw, that two physicians made examinations of the plaintiff a short time after she claimed to have been injured. One of the physicians made two examinations, and the other made one. They were for the purpose of ascertaining her physical condition. She did not call these witnesses. The Supreme Court of Michigan holds that it was error to refuse to give the jury an instruction stating these facts, and the plaintiff's failure to produce these witnesses might be given such weight by the jury as the latter saw fit.

Can Not Examine Persons to Settle Disputes of Doctors.—The plaintiff in the case of French vs. the Brooklyn Heights Railroad Company, a man 70 years of age, was thrown down and sustained a painful injury to his side, by the sudden starting of one of the defendant's street cars, while he was attempting to board it. There was a conflict of evidence upon the question of whether at the time of the trial his side showed a depression at the point of contact, indicating a continuation of the difficulty. The trial court apparently found in his favor upon this point. It gave him a judgment for $400, and, taking this view of the case, the second appellate division of the Supreme Court of New York declares that it is unprepared to pronounce it excessive. Moreover, it holds that there was no error on the trial court in refusing to make examination of the plaintiff's person. Indeed, it holds that the defendant had no right to demand that the court examine the plaintiff to determine a dispute between opposing doctors. If there are any authorities in support of the contention that the trial court erred in refusing to inspect the plaintiff physically, it says that the defendant's counsel did not call the attention of the court to them, and, in the absence of such authorities, the judgment of the court below should be affirmed.

Liability for Delay in Delivery of Medicine.—On the appeal of the Pacific and Wells-Fargo Express Companies vs. Redman, the Court of Civil Appeals of Texas has reversed a judgment for $380.30 recovered by the latter party for damages for physical and mental pain suffered and for the retarding of her recovery by an unwarranted delay in the delivery of a package of medicine. This had been prescribed by her physician, and could not be procured at a nearer point than a town 23 miles or so distant, from whence it was ordered by telephone. But the order was sent by, and the medicine shipped to, a relative, without the agent of the express companies being notified for whom intended, although the agent knew of the relationship and had heard of the plaintiff's sickness. Now, such being the case, the court applies the rule that, in the absence of notice of the principal's connection with the contract, she can recover only such damages as her agent could have recovered in a suit brought in his own name. But such damages it holds she was entitled to, though not special damages, for a delay in the delivery of three days beyond the time the medicine should have been delivered. Nor, under the rule adopted in that state, does it consider that notice after the date of the contract of shipment would render the companies liable for special damages. Then, too, it suggests that on another trial, due consideration be given to the fact that the medicine could have been procured in a few hours, at small expense, by the use of a private conveyance, pointing out that a well-settled rule of law imposes upon persons injured the duty to exercise reasonable care to minimize the damages likely to result from the fault of another.

Proof of Account in Action Against Administrator.—In the case of Garwood vs. Schlichenmaier, administrator, the Court of Civil appeals of Texas has reversed a judgment for $150 for medical services. The plaintiff physician had testified, among other things, that he had treated the patient for epilepsy during a certain period of about two months, nearly every day, or sometimes every two or three days; that he wrote prescriptions for him frequently, and gave him medicine in his office. The court holds that this was inadmissible on account of being testimony with reference to a transaction with the intestate, within the meaning of the state statute providing that in an action against an administrator neither party shall testify as to any transaction with the deceased, unless called as a witness by the opposite party. In other words, it would seem that under such a statute a physician is incompetent to prove his own services as such to the deceased, against the representative. If, however, the performance of the services has been proved otherwise, when so proved, the plaintiff, the court says, it would seem, may testify as to the value. Nor does it consider than an account by a physician for his services is such a one as can be proved under the provisions of a statute making a verified open account prima facie evidence of the debt. The word "account" in that connection, it holds, applies to transactions between persons in which, by sale upon the one side and purchase upon the other, the title to personal property is passed from one to the other, and the relation of debtor and creditor is thereby created by general course of dealing. So, it holds that the only purpose for which a physician's account is admissible in evidence in such a case as this is to show that it has been properly verified as a claim against the estate of the deceased, and that it has been rejected by the administrator, and that it is error to admit it in evidence for any other purpose.

Medical Examiners by Courtesy—Use of Narcotics.—The Court of Civil Appeals of Texas says, in National Fraternity vs. Karnes, that the medical examiner is regarded as the agent of the insurer, save where it appears that he colludes with the insured to defraud the company. But in this case it was the medical examiner of the insurer who wanted to be insured, and in company with the organizer of the local lodge went to the office of another physician, taking with him his answers already written out and signed. As to what then occurred the testimony of that other physician was such as to

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For Cold in the Head.

The following powder will relieve the congestion and act as a palliative to the mucous membrane of the nose:

℞.	Menthol	gr. iii		20
	Acidi borici	ʒi	4	
	Bismuthi subcarb.	ʒiss	6	
	Benzoin	ʒiss	6	
	Sodii bicarb.	gr. x		66
	Magnesii carb.	gr. xv	1	
	Sacchari lactis	℥i	32	

M. Sig.: Use as an insufflation into the nose four or five times a day.

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Parotitis (Mumps).

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℞.	Liq. ammonii acetatis	℥ss	16	
	Spts. etheris nitrosi	ʒii	8	
	Aq. menthæ pip. q. s. ad	℥iii	96	

M. Sig: One teaspoonful every two or three hours for a child over five years of age.

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℞.	*Acidi hydrobrom. dil.*	m. x		66
	Ferri bromidi	gr. i		06
	Potassii bromidi	gr. x		66
	Sodii salicylatis	gr. ii		12
	Spts. rectificat.			
	Glycerol pepsini, āā	m. x		66
	Ol. gaultheriæ	m. ss		03
	Liq. ammon. cit. (B. P.)	ʒss	2	

M. Sig.: At one dose. This may be doubled or tripled.

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	Potassii chloridi	gr. ivss		26
	Sodii phosphatis	gr. i		06
	Potassii phosphatis	gr. iiss		15
	[illegible]	gr. ss		03
	[illegible]	gr. 1/6		01
	Potassii sulphatis	gr. ss		03
	Ferri glycerophosphatis	gr. i		06
	Pulv. hemoglobin	gr. i		06

M. Ft. chartula No. i. Sig.: One such powder twice a day.

Treatment of Tinea Tonsurans.

Dr. Brown, in *The Post-Graduate*, recommends:

℞.	Acidi salicyl.	gr. xx	1	33
	Chrysarobin	gr. xx	1	33
	Ichthyol	ʒi	4	
	Lanolin			
	Vaselini, āā	℥ss	16	

M. Sig.: Shave the parts and rub it over the whole surface. At the end of three days the head should be washed and some emollient salve applied to check the dermatitis. In a few days the former salve may be re-applied. The treatment should be kept up for a month or six weeks.

Seborrheic Eczema.

Dr. Brown also states that resorcin and sulphur are the most valuable agents in treatment of seborrheic eczema. He recommends the following:

℞.	Hydrarg. chloridi corros.	gr. i		06
	Resorcin	ʒi	4	
	Chloralis hydratis	ʒi	4	
	Ol. ricini	gr. x		66
	Spts. vini	℥iv	128	

M. Ft. lotio. Sig.: Apply to the scalp once or twice daily.

In more severe grades, with redness and infiltration of the scalp, a pomade such as the following serves the purpose better:

℞.	Acidi salicyl.	gr. xv	1	
	Resorcin	gr. xxv	1	66
	Sulphuris sublim.	ʒi	4	
	Ung. aquæ rosæ	℥i	32	

M. Sig.: Apply locally.

Scrofulosis.

Chrystie, in "System of Pract. Ther.," places cod-liver oil first in the list of medicinal agents in treatment of scrofulosis. He recommends the following excellent emulsions:

R.	Olei morrhuæ	℥vi	192
	Olei gaultheriæ	ʒi	4
	Mucilag. tragacanthæ	℥ii	64
	Aq. aurantii flor. q. s. ad	℥xii	384

M. Sig.: From a dessertspoonful to a tablespoonful three times a day.

Or,

℞.	Ol. morrhuæ	℥vi	192
	Ol. gaultheriæ	ʒi	4
	Spts. chloroformi	ʒii	8
	Glycerini		
	Yolk of egg, āā	ʒv	20
	Aq. aurantii flor. q. s. ad	℥xii	384

M. Sig.: One dessertspoonful to a tablespoonful three times a day. The second mixture is not so thick as the first and is, for that reason, preferred.

Administration of Iodoform.

According to *Presse Med.*, Thibaut combines iodoform with equal parts of pulverized Ceylon cinnamon for external use or pills. As a salve he uses the following:

℞.	*Iodoformi*	*gr.* xv	1	30
	Essentiæ cinnamomi Zeylanici	m. v		
	Vaselini	ʒv	20	

M. Sig.: For local application.

Medicolegal.

Experiments in Nature of Hearsay Evidence.—The Supreme Court of Louisiana holds, in the case of Seibert vs. McManus, that experiments made in the absence of parties interested in the results thereof are, as evidence, in the nature of hearsay, and, if received, the facts and conditions under which they were made should be shown to have been identical with those of the case before the court.

Failure to Call Physicians as Witnesses.—It appeared from the testimony in the personal injury case of Vergin vs. the City of Saginaw, that two physicians made examinations of the plaintiff a short time after she claimed to have been injured. One of the physicians made two examinations, and the other made one. They were for the purpose of ascertaining her physical condition. She did not call these witnesses. The Supreme Court of Michigan holds that it was error to refuse to give the jury an instruction stating these facts, and the plaintiff's failure to produce these witnesses might be given such weight by the jury as the latter saw fit.

Can Not Examine Persons to Settle Disputes of Doctors.—The plaintiff in the case of French vs. the Brooklyn Heights Railroad Company, a man 70 years of age, was thrown down, and sustained a painful injury to his side, by the sudden starting of one of the defendant's street cars, while he was attempting to board it. There was a conflict of evidence upon the question of whether at the time of the trial his side showed a depression at the point of contact, indicating a continuation of the difficulty. The trial court apparently found in his favor upon this point. It gave him a judgment for $400, and, taking this view of the case, the second appellate division of the Supreme Court of New York declares that it is unprepared to pronounce it excessive. Moreover, it holds that there was no error on the trial court in refusing to make examination of the plaintiff's person. Indeed, it holds that the defendant had no right to demand that the court examine the plaintiff to determine a dispute between opposing doctors. If there are any authorities in support of the contention that the trial court erred in refusing to inspect the plaintiff physically, it says that the defendant's counsel did not call the attention of the court to them, and, in the absence of such authorities, the judgment of the court below should be affirmed.

Liability for Delay in Delivery of Medicine.—On the appeal of the Pacific and Wells-Fargo Express Companies vs. Redman, the Court of Civil Appeals of Texas has reversed a judgment for $380.30 recovered by the latter party for damages for physical and mental pain suffered and for the retarding of her recovery by an unwarranted delay in the delivery of a package of medicine. This had been prescribed by her physician, and could not be procured at a nearer point than a town 23 miles or so distant, from whence it was ordered by telephone. But the order was sent by, and the medicine shipped to, a relative, without the agent of the express companies being notified for whom intended, although the agent knew of the relationship and had heard of the plaintiff's sickness. Now, such being the case, the court applies the rule that, in the absence of notice of the principal's connection with the contract, she can recover only such damages as her agent could have recovered in a suit brought in his own name. But such damages it holds she was entitled to, though not special damages, for a delay in the delivery of three days beyond the time the medicine should have been delivered. Nor, under the rule adopted in that state, does it consider that notice after the date of the contract of shipment would render the companies liable for *special damages*. Then, too, it suggests that on another trial, due consideration be given to the fact that the medicine could have been procured in a few hours, at small expense, by the use of a private conveyance, pointing out that a well-settled rule of law imposes upon persons injured the duty to exercise reasonable care to minimize the damages likely to result from the fault of another.

Proof of Account in Action Against Administrator.—In the case of Garwood vs. Schlichenmaier, administrator, the Court of Civil appeals of Texas has reversed a judgment for $150 for medical services. The plaintiff physician had testified, among other things, that he had treated the patient for epilepsy during a certain period of about two months, nearly every day, or sometimes every two or three days; that he wrote prescriptions for him frequently, and gave him medicine in his office. The court holds that this was inadmissible on account of being testimony with reference to a transaction with the intestate, within the meaning of the state statute providing that in an action against an administrator neither party shall testify as to any transaction with the deceased, unless called as a witness by the opposite party. In other words, it would seem that under such a statute a physician is incompetent to prove his own services as such to the deceased, against the representative. If, however, the performance of the services has been proved otherwise, when so proved, the plaintiff, the court says, it would seem, may testify as to the value. Nor does it consider than an account by a physician for his services is such a one as can be proved under the provisions of a statute making a verified open account prima facie evidence of the debt. The word "account" in that connection, it holds, applies to transactions between persons in which, by sale upon the one side and purchase upon the other, the title to personal property is passed from one to the other, and the relation of debtor and creditor is thereby created by general course of dealing. So, it holds that the only purpose for which a physician's account is admissible in evidence in such a case as this is to show that it has been properly verified as a claim against the estate of the deceased, and that it has been rejected by the administrator, and that it is error to admit it in evidence for any other purpose.

Medical Examiners by Courtesy—Use of Narcotics.—The Court of Civil Appeals of Texas says, in National Fraternity vs. Karnes, that the medical examiner is regarded as the agent of the insurer, save where it appears that he colludes with the insured to defraud the company. But in this case it was the medical examiner of the insurer who wanted to be insured, and in company with the organizer of the local lodge went to the office of another physician, taking with him his answers already written out and signed. As to what then occurred the testimony of that other physician was such as to give the impression that there was really no medical examination, and that he treated the matter and signed the certificate as a mere act of accommodation for a brother physician, relying on the latter's being a physician himself, and understanding all the facts. In other words, that he in fact, and as an act of courtesy to his brother physician, gave him the benefit of his signature, for the purposes of the insurance, without any examination. Now, the court holds that the fraternity became bound, under the circumstances, by the information which the second physician possessed at the time he recommended the other as by information possessed by an agent. But, inasmuch as it is the established rule in that state that the agent's knowledge must have been obtained in the transaction of the principal's business to be imputed to the principal, it holds that the fraternity would not be charged with facts in the knowledge of the second physician or temporary medical examiner unless they were disclosed to him by the examination. Another point of interest in this case is with reference to the construction to be put upon the question: "Do you now, or have you ever used opium or other narcotics?" The answer was "No," and the court holds that the term "use" in this contract was correctly construed to have reference to a use which amounted to a custom or habit. Then, keeping this definition in mind, the court holds that, the answers having been warranted to be true, if this one was false it would invalidate the insurance, even if made in good faith, or through mistake, or by inadvertence, as well as if made intentionally.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), March 9.

1 *The Period of Incubation of Yellow Fever: A Study from Unpublished Observations. Henry R. Carter.
2 *A Contribution to the Bottini Operation for the Radical Relief of Prostatic Obstruction. L. Bolton Bangs.
3 *Acute Gastric Ulceration. H. Newton Heineman.
4 *Treatment of Acute Serofibrinous Pleurisy. Charles E. Nammack.

New York Medical Journal, March 9.

5 *Blood in the Urine as a Symptom and the Diagnosis of Its Source. Joseph Wiener, Jr.
6 The Specific Treatment of Acute Dysentery. (To be concluded.) William J. Cruikshank.
7 The Pathology of Intrauterine Death. (Continued.) Neil MacPhatter.
8 *Ichthyol in the Treatment of Deep-seated Inflammations. Walter T. Slevin.
9 *Resorcin as a Preservative for Suprarenal Extract Solution. Seymour Oppenheimer.
10 *The Radical Treatment of Malignant Diseases of the Larynx. Ernest Waggett.
11 *The Surgery of the Turbinal Bodies, with a New Method of Operating. J. E. Boylan.

Philadelphia Medical Journal, March 9.

12 *False Pregnancy (Pseudocyesis) and Myxedema. Edward P. Davis.
13 *The Actions of Morphin Upon Metabolism, with Especial Reference to "Internal Secretion" and Its Bearing Upon Toxicology. Edward T. Reichert.
14 *Paresis Simulating Brain Tumor. Wharton Sinkler.
15 Operative Treatment of Tubercular Lymphomata of the Neck. Prescott Le Breton.
16 A Skiagraph of Bennett's Fracture of the Metacarpal Bone of the Thumb or "Stave of the Thumb." John B. Roberts.
17 A Cast and Skiagraph of the So-called Smith's Fracture of the Lower End of the Radius. John B. Roberts.
18 On the Necessity for the Organization of Bacteriological Commissions for the Study and Investigation of Quarantinable Diseases Under the Formation and Control of the Governing Authorities of the Countries Interested—An Absolute Necessity for the Scientific Management and Betterment of Maritime Hygiene and Quarantine. Henry B. Horlbeck.
19 *Albuminous Nutrition and Nutritious Albumen. Albert Bernheim.
20 The Function and Distribution of Combined Hydrochloric Acid in Proteolytic Digestion. A. E. Austin.

Medical News (N. Y.), March 9.

21 *Our Duties Toward the Consumptive Poor. S. A. Knopf.
22 *The Intravesical Evidences of Perivesical Inflammatory Processes in the Female. Frederic Bierhoff.
23 *The Prevention of Insanity. Henry Waldo Coe.
24 *The Tonometer and Its Value in Determining Arterial Tension. Henry L. K. Shaw.
25 The Present Status of the Subarachnoidean Injection of Cocain for Anesthesia (Corning-Bier Method). John S. Miller.
26 A Case of Peroneal Nerve-palsy from Muscular Effort. Charles J. Aldrich.

Boston Medical and Surgical Journal, March 7.

27 *Clinical Notes and Comments; Cancer of the Extremity of the Common Bile Duct. Robert T. Edes.
28 *The Interpretation of Bacteriological Findings in Diphtheria Diagnosis. Hibbert W. Hill.
29 *Destruction of Left Eye and Frontal Lobe of Brain from a Shotgun Explosion. Edward Swasey.
30 *Convulsions in Children. William N. Bullard and Charles W. Townsend.
31 Acute Pancreatitis. M. H. Richardson.
32 Case of Recovery After Operation for Acute Pancreatitis. J. C. Munro.

Cincinnati Lancet-Clinic, March 9.

33 Is Ethical Medicine Mythical? Charles D. O'Hara.
34 A Mistake in Diagnosis in a Case of Pulmonary Tuberculosis. J. C. McMechan.

St. Louis Medical Review, March 9.

35 *Middle Ear Disease in Its Relationship to the Cranial Cavity. Otto Stein. With Abstracts of Five Cases, Explanatory of Illustrations. (To be continued.) Carl Barck.

Medical Fortnightly (St. Louis, Mo.), February 25.

36 Diseases of the Stomach. (Continued.) J. M. G. Carter.
37 Chronic Bronchitis and Its Treatment. Henry J. Ostrander.

Pediatrics (N. Y.), March 1.

38 *Persistence of Symptoms After Removal of Adenoids and Tonsils—Causes of. F. Huber.
39 Circumcision for Phimosis and Venereal Warts. William R. Blue.
40 Adenoids. Robert M. Lapsley.

American Practitioner and News (Louisville, Ky.), February 1.

41 Surgical Technic in Country Practice. E. J. Kempf.
42 Three Cases of Disease of Unusual Character (Aberrant Remittent Fever, etc.) T. B. Greenley.
43 Suggestive Therapeutics. L. L. Cole.

Journal of Nervous and Mental Diseases (N. Y.), March.

44 *The Amelioration of Paralysis Agitans and Other Forms of Tremor by Systematic Exercises. John Madison Taylor.
45 A Case with Symptoms of Cerebrospinal Meningitis, with Intense and General Alteration of the Nerve Cell-Bodies, but with Little Evidence of Inflammation. William G. Spiller.
46 A Case of Muscular Dystrophy. Charles G. Chaddock.

Journal of Cutaneous and Genito-Urinary Diseases (N.Y.), March.

47 A Critical Review of the Literature of Gumma of the Spermatic Cord, with the Report of a Case. Herman Goldenberg.
48 A Case of Malignant Syphilis Cured by Zittmann's Decoction. Granville MacGowan.
49 New Intravesical Cystoscopic Instruments. 1. Modified Lithotrite and Foreign-body Forceps. 2. Foreign-body Forceps. Frederic Bierhoff.
50 A Case of Multiple Angiosarcoma of the Skin. James C. Johnston.

Journal of Eye, Ear and Throat Diseases (Baltimore, Md.), January and February.

51 *Some Observations Upon the Diagnosis and Treatment of Chronic Maxillary Empyema. John R. Winslow.
52 The Nasal Septum; Its Diseases. J. William Watson.

Cleveland Medical Gazette, March.

53 Sick-room Disinfection. Robert G. Schnee.
54 Etiology of Chronic Exudative Nephritis. D. S. Hanson.
55 Prognosis of Chronic Exudative Nephritis. O. B. Campbell.
56 Treatment of Chronic Exudative Nephritis. F. J. Morton.
57 Amyloid Kidney. A. S. Maschke.
58 Facial Erysipelas. C. W. Race.
59 Tobacco. C. E. Ford.

Fort Wayne Journal-Magazine, January.

60 *The Early Diagnosis of Gastric Cancer with a View to Its Radical Cure. G. W. McCaskey.
61 Some Uses of Local Anesthesia in Genito-urinary Surgery. Wm. N. Wishard.

New York State Journal of Medicine (N. Y.), February.

62 *Aseptic Minor Surgery. Douglas Ayres.
63 *An Epidemic of Diphtheria Traced to a Milk Supply. Chauncey P. Biggs.
64 *The Control of Diphtheria in Small Cities and Country Districts from the Bacteriological Standpoint. Veranus A. Moore.

Buffalo Medical Journal, March.

65 Remarks on the Work of the Buffalo Laboratory on the Investigation of Cancer. Harvey R. Gaylord.
66 Formaldehyde. A. A. Young.
67 Senility, Senile Dementia and Their Medicolegal Aspects. F. H. Stephenson.
68 *Some Mistaken Impressions Regarding Troubles of the Genito-urinary Organs. J. Henry Dowd.
69 Empyema with Recovery in a Boy Two and One-half Years. M. L. Bennett.
70 The Surgical Diagnosis of Right-side Abdominal Diseases. A. L. Beahan.
71 Case of Extrauterine Pregnancy. L. G. Hanley.

Brooklyn Medical Journal, March.

72 The Biochemical Pathology of the Liver. Henry A. Bunker.
73 The Differential Diagnosis of the More Common Diseases of the Liver. Glentworth R. Butler.
74 An Address Before the Alumni Association of the Long Island College Hospital Victor C. Vaughan.
75 Acute Myelitis. Edward D. Fisher.

Annals of Ophthalmology (St. Louis, Mo.), January.

76 *Notes on the Bacteriology of the Conjunctival Sac and Its Bearing Upon Surgical Procedure. P. Chalmers Jameson.
77 *Alveolar Sarcoma of the Choroid. William Posey and Edward A. Shumway.
78 *Experiences in the Use of Homatropin as a Cycloplegic. Edward Jackson.
79 *Vernal Conjunctivitis. L. Webster Fox.
80 *Concerning the Development of Asthenopia and Errors of Refraction. Carl Schulin.
81 *Contusions of the Eye Producing Obliterating Hyphema. M. F. Weymann.

Medical Herald (St. Joseph, Mo.), March.

82 A Case of Nephritic Calculus with Symptoms of Thirty-three Years' Duration—Operation—Recovery. Herman E. Pearse.
83 Drainage. Fred G. Thompson.
84 Gastro-enteritis of Childhood. F. E. Coulter.
85 Hiram Christopher: Physician and Scholar. W. J. Bell.

Medical Dial (Minneapolis, Minn.), March.

86 Heredity from a Medical Standpoint and the Necessity of Its Recognition by the Public. Chester M. Carlaw.
87 Early American Medicine. James Moores Ball.

Medicine (Detroit, Mich.), March.

88 *Pseudo-phosphaturia as the Cause of a Persistent Urethritis. Alfred Schalek.
89 *The Choice of Operation for Stone in the Bladder. Byron B. Davis.
90 *Treatment of Septic Infections of the Kidneys, and Cysto-nephroses. L. L. McArthur.
91 Tuberculous Perimyocarditis with Tuberculous Aortic Aneurysm in a Dog. Ludvig Hektoen.

Louisville Monthly Journal of Medicine and Surgery, March.

92 Traumatism and Appendicitis. James S. Chenoweth.
93 Sanitation and Water-supply. H. Preston Sights.

Medical and Surgical Monitor (Indianapolis, Ind.), February 15.

94 Treatment of Chancroidal Adenitis. W. A. Hackett.
95 Perforating Ulcer of the Posterior Wall of the Stomach—Report of Case and Autopsy. A. T. Stewart.
96 Eye-strain as an Etiologic Factor in Nervous Headache. Frank M. Pray.

Maryland Medical Journal (Baltimore), March.

97 Eight Cases of Goiter in One Family. Samuel Amberg.
98 Four Cases of Sporadic Cretinism. Henry Barton Jacobs.
99 *Curetting the Urethra in the Treatment of Chronic Posterior Urethritis. George Walker.
100 A Review of Some of the Recent Work on the Physiology and Pathology of Blood. (Continued.) Thomas R. Brown.

Austin Flint Medical Journal (Mason City, Iowa), February.

101 What Should the General Practitioner Know About Diseases of the Eye? F. L. Rogers.
102 Variola. C. M. Swale.
103 Our Confrères. Shorland Harris.
104 Dr. Bowen for Governor. J. W. Kime.
105 Atropin in Inflammation of the Eye. Frank G. Murphy.

American Journal of Medical Sciences (Philadelphia), March.

106 *The Surgical Treatment of Ascites Due to Cirrhosis of the Liver, with Report of Two Cases. Frederick A. Packard and Robert G. Le Conte.
107 Splenic-myelogenous Leukemia with Pulmonary Tuberculosis. Report of Case. Henry L. Elsner and William A. Groat.
108 Hemorrhagic Typhoid Fever. Augustus A. Eshner and T. H. Weisenberg.
109 A Study of Congenital Sarcoma of the Liver and Suprarenal. William Pepper.
110 A Case of Sarcoma of the Thigh, for Which Disarticulation Was Performed Through the Hip Joint, with the Formation of a Posterior Flap. John Chalmers Da Costa.
111 *Stereognosis and Allied Conditions. Charles W. Burr.
112 Clinical Study of Acute Myocarditis. Beverly Robinson.

Medical Examiner and Practitioner (N. Y.), February.

113 Race in Relation to Life Assurance. C. Theodore Williams.
114 Locality and Occupation in Relation to Life Assurance. G. V. Poore.
115 The Relation of Deformities to Life Expectancy. John L. Porter.
116 Case of Splenic-myelogenous Leukemia. Talbot Jones.

International Journal of Surgery (N. Y.), March.

117 *The Fate of Sponges, Ligatures and Other Foreign Bodies in the Peritoneum. Carl Beck.
118 The Porro-Cesarean Operation—Report of Two Cases. A. L. Beahan.
119 Nose and Throat Work for the General Practitioner. (Continued.) George L. Richards.
120 *Pryor's Vaginal Versus Abdominal Hysterectomy. Hugh W. Crouse.
121 The Technique of Surgical Gynecology. (Continued.) Augustin H. Goelet.
122 Practical Suggestions Upon the Treatment of Rectal Diseases. (Continued.) James P. Tuttle.
123 Regional Minor Surgery. (Continued.) George G. Van Schaick.
124 Strangulated Inguinal Hernia, with a Congenital and an Acquired Sac, and Acute Hydrocele of the Tunica Vaginalis Testis, and a Congenital Hypertrophy of the Spermatic Cord, But Absence of the Epididymis—Operation. J. Coplin Stinson.
125 Clinical Report of Four Cases of Lupus Vulgaris. J. W. P. Smithwick.
126 The Abuse of the Poultice. Thomas M. Paul.

Southern California Practitioner (Los Angeles), February.

127 A Phenomenal Century of Surgery. F. C Shurtleff.
128 The American Cigaret. William S. Fowler.
129 Where Do We Stand? W. W. Apple.
130 The Fear of Insanity as a Cause of Insanity. Henry W. Coe.
131 Inflation in Acute Diseases of the Ear. William T. Bolton.
132 Is Retinoscopy a Practical Method of Correctly Measuring Errors of Refraction? W. H. Roberts.

Charlotte Medical Journal, February.

133 Valvular Lesions of the Heart. L. B. McBrayer.
134 The Prevention of Recurring Hay Fever Attacks. Edward W. Wright.
135 Concerning Smallpox and Vaccination. E. D. Payne.
136 Evolution and Life. Joseph Clements.
137 Cystitis Accompanied by Malarial Hematuria. L. H. Warner.
138 The Comedy of Ethics. Paul Paquin.
139 Does Aseptic Vaccine Afford Absolute Protection Against Variola? A Test Case. T. J. Lawson.
140 Protonuclein as a Remedy for Tuberculosis, with Tabulated Report of Cases. C. W. Canan.
141 Extracts from Report of Research Experiments on the Physiologic Action of Petroleum. G. Burbridge White.

Texas Courier-Record of Medicine (Fort Worth), February.

142 Is It Smallpox? J. W. Carhart.
143 Typhoid Fever. A. H. Lindsay.
144 Spectacles—Their Use and Abuse. Joseph A. White.
145 Transperitoneal Ureterolithotomy. Report of a Case in Which the Stone Was Located by the X-ray. George N. J. Sommers.
146 Bullet in Hip Joint Located by X-ray. C. D. Harrington.
147 Enuresis in Children. G. W. B. Swain.

Southern Practitioner (Nashville, Tenn.), March.

148 The Cystoscope in the Diagnosis of Diseases of the Genito-urinary Tract. J. W. Handly.
149 Quick Removal of Tape-worm—"Tenia Solium." A. J. Weldon.
150 A Case of Chronic Rheumatism. L. B. Smith.
151 Report of a Case of Typhoid Fever with Complications. J. T. Abston.

Carolina Medical Journal (Charlotte, N. C.), February.

152 Movable Kidney. R. L. Payne.
153 Movable Liver and Its Clinical Significance. W. O. Nisbet.
154 Purulent Otitis Media—Its Causes, Complications and Treatment. B. R. Kennon.
155 Report of a Case of Pylorectomy for Carcinoma. Stuart McGuire.

Alabama Medical Journal (Birmingham), February.

156 Lacerations of the Perineum. R. P. Huger.
157 Suppurative Pleurisy Splenic Myelogenic Leukemia. B. L. Wyman.
158 Movable Kidney. U. J. W. Peters.

AMERICAN.

1. **Yellow Fever.**—Carter thinks that the incubation period of yellow fever may be ranged between three and nine days, the shortest recorded in his notes being three days and the longest eight and one-fourth. He does not claim that cases of longer or shorter incubation may not occur, but the above limitations apparently include the average.

2. **Bottini's Operation.**—Bangs gives his experience with the Bottini operation, claiming that it cures or improves a large proportion of cases without serious risk and with the minimum of detention. The patient should be prepared for this operation as carefully and thoroughly as for any other, and the anesthetic should be chosen with judgment. Local anesthesia is usually accompanied with more or less pain during the operation. One symptom that follows the operation is frequent urination, and fever is a condition also to be expected. The post-operative period is more nearly three weeks than two. Some patients may be allowed to sit up at the end of a week, but should not resume their ordinary mode of life for at least two weeks. The after-treatment is as important as any part of the operation. Incontinence of urine has followed two of his cases. He reports a case and calls attention to the following points of technique which it has taught him: "1. That the flow of electricity must be maintained to a degree which will keep the blade at white heat. 2. That in measuring a given case for the length of the incisions, allowance must be made for the action of the galvanic cautery beyond the distance at which the knife shall actually penetrate. 3. That the operation must be done with great slowness, in order to prevent hemorrhage and to get the best results."

3. **Gastric Ulceration.**—After a review of the history of the operation for gastric ulceration, Heineman discusses the pathology, and the etiology, in regard to which point he discredits the hyperacidity theory, the clinical history, differential diagnosis, and prognosis. He believes that medical treatment should be tried unless the hemorrhages are repeated and a count of red blood globules shows a serious diminution in their number. It should include absolute physical rest of body and stomach, alimentation being exclusively rectal for three or four weeks. The surgical treatment, however, should be thought of and preparations made for it if necessary. The method of procedure of Cazin promises the best results; inversion of the gastric mucous membrane, careful absorption of the mucous by means of sterilized gauze and minute search for the seat of ulceration should be made.

4. **Acute Serofibrinous Pleurisy.**—Nammack thinks that perhaps we have gone too far in our fearlessness of tapping for pleurisy. He has been in the habit of teaching, in his clinics, that chest-tapping should be performed for serofibrinous pleurisy for three indications: 1. When life is directly threatened or endangered by asphyxia from compression, or by cardiac weakness. 2. When fluid has arisen to the third interspace in front, since we find that effusions of this size rarely disappear spontaneously. 3. In all lesser effusions when spontaneous absorption is unduly delayed. When these are not present we should think more of medical treatment, including local applications of guaiacol, or iodin when guaiacol has a too pronounced effect on the heat-regulating and vasomotor centers; mild cathartics, limitation of ingested liquids, and the consumption of as much table salt as the patient can be induced to take. While there are other conditions than the effusion in connection with pleurisy, this is the special point referred to here.

5. **Urinary Hemorrhage.**—Wiener discusses the subject of blood in the urine, with special reference to the diagnosis of its source, and gives a tabulated statement of the symptoms of hematuria from its pathologic conditions. In case of urethral hemorrhage it will continue without regard to the act of urination. If the hemorrhage is from the prostate, it usually occurs in middle to old age. The symptoms are absent in the early stages, the frequency of urination is increased both day and night, pain is usually absent, the clot usually precedes a free flow of blood, the condition is somewhat relieved by rest and there is usually cystitis with later pyelonephritis. If due to stone in the bladder, it occurs usually in childhood or adult life. The urination is involuntarily arrested; the symptoms are those of cystitis. The urination is markedly increased during the day, and there is pain in the glans, even after urination. The bleeding is most profuse at night and is much relieved by rest. The other organs are usually normal. If from vesical tuberculosis, it generally occurs in early life. The urination is voluntarily arrested, pain in the glans ceases after urination, the frequency is increased both day and night and not relieved by rest. The blood is bright, and is sudden in its appearance. The bleeding is transitory; usually a few drops at night. The prostate, seminal vesicle and epididymis are often involved in the general disease. If from tumor of the bladder, it occurs usually at an advanced age, symptoms are often absent, frequency of urination may not be increased, pain is unusual, bleeding is intermittent, often nocturnal and profuse. It is not influenced by rest and occurs mostly at the end of urination. The other organs are usually normal. Stone in the kidney usually occurs in adults about 40 years of age. Pyelitis is a late complication. Urination is relieved by rest, and is increased by exercise. Severe repeated colics occur. The bleeding is rarely profuse, may appear and disappear suddenly and is almost completely precipitated on standing. In the case of tuberculosis of the kidney, the patient is usually a young adult in poor general condition. The frequency of urination is marked both day and night; severe pain is felt, bleeding may be absent for long periods, and is usually of slight amount. It is not influenced by rest. The blood is intimately mixed in the urine and not completely precipitated. Pyelitis exists, spreading to the ureter and bladder. In case of tumor of the kidney, carcinoma is the type in advanced age; sarcoma may occur early. The symptoms are those of abdominal tumor. The frequency of urination is not markedly increased. Renal colic due to clot in the ureter is a symptom. The bleeding is profuse, often most at night and is not relieved by rest. The blood is very intimately mixed in the urine and not completely precipitated. The other organs are generally normal. The conditions that may lead to error in diagnosis are hemoglobinuria, drug intoxication from turpentine, carbolic acid, sulphonal, etc.: certain kinds of foods may cause hematuria, such as rhubarb, strawberries, and gooseberries, and the menstrual blood may some times get into the urine and cause errors of diagnosis. Hemoglobinuria may be readily recognized by the color, or absence of blood cells. The spectroscope may be of use, showing the characteristic dark bands between the Fraunhofer lines D and E. Wiener thinks that perhaps we are too prone in this age to lay aside old methods for new ones, and the object of his paper is to show how, in many cases, the diagnosis may be made out without the use of complicated apparatus.

8. **Ichthyol.**—Slevin recommends the following formula to be applied by rubbing upon the inflamed parts:

R.	Ichthyol	gr. 45
	Lead Iodid	gr. 45
	Ammonium chlorid	gr. 10
	Petrolatum, enough to make	1 ounce

He reports three cases of inflammatory diseases in which it was applied with benefit.

9. **Resorcin as Preservative for Suprarenal Extract.**—Resorcin has been found by Oppenheimer to prevent the putrefactive changes which take place in suprarenal extract on account of the large amount of animal matter present and at the same time does not impair its efficiency. It has been his habit to add 60 gr. of good dessiccated extract to one ounce of a 1 per cent. resorcin solution. The quantity for daily use is filtered, and he finds that as a hemostatic and vasomotor constrictor this combination is of great service.

10. **Malignant Disease of the Larynx.**—Thyreotomy, by Prof. J. N. Mackenzie's new operation, is questioned by Waggett as not yet having been sufficiently tried to justify all the claims that are made in its favor. The methods at present employed by Semon, Butlin, and others have yielded such brilliant results that he thinks it is absurd to sweep it aside as discredited.

11. **Turbinotomy.**—Boylan has operated in sixty-four cases for removal of the lower portion of the turbinated body with the cold snare. He thinks this method preferable to the use of the saw and scissors, excepting where excessive indurations indicate thickened bone. In order to meet the objection of the slipping forward of the loop over the medial surface and lower margin of the body, he fixes the end of the loop by burying the

point of a fine tenaculum, the hook of which forms a right angle, into the lower margin of the turbinated body at the point of operation, carrying the loop over its handle into the meatus, adjusting it so that it passes behind and is held in place at the back of the hook. In this way it is possible to entirely control the removal of the amount of tissue required. Amputation can be done with accuracy. Finding that the point of the hook was at times caught in the loops, he afterward had this bent to an angle somewhat more acute than a right angle, to avoid this. During the manipulation the snare should be pressed firmly backward and upward, so that the loop is drawn from above rather than from in front.

12. **Pseudocyesis and Myxedema.**—Noticing first the occasional difficulty of recognizing the genuine condition and the medicolegal importance of spurious pregnancy, Davis reports several cases of the latter condition, one of them a neurotic patient apparently recovered from myxedema.

13. **Morphin.**—Reichert reports experiments on the action of morphin on heat production, heat dissipation and body temperature, with special reference to the effect of the depression produced by the drug upon the internal secretions. He claims that the profound depression of general metabolism thus produced by even non-fatal doses, together with the probable involvement of the processes concerned in the internal secretions and in repair and their consequent affection, may be considered among the important factors in the question of the treatment of morphin poisoning, and that probably future research will show that we have in this depression an agent in explaining a part at least of the play of certain physiologic antidotes, as well as the non-effectiveness of others, such at atropin, which on theoretical ground would be supposed to be effective. Also, if a means be found to restore the normal processes of secretion and repair, the counteraction of the direct action of morphin upon the metabolic process as well as the respiration will probably be accomplished with less difficulty than heretofore.

14. **Paresis Simulating Brain Tumor.**—Sinkler reports a couple of cases in which the symptoms strongly indicated brain tumors in the earlier phases of the disease, the patient later becoming clearly a paretic. He calls attention to these facts as indicating possible errors of diagnosis in early paresis.

19. **Albuminous Nutrition.**—Bernheim's article is largely the notice of an article by Finkler, who describes a form of albumin food which can be given in many conditions where a special food is required. He gives its advantages as follows: This food is an almost chemically pure albumin of animal and vegetable origin in the average proportion of normal daily diet. It is a slightly brownish powder, odorless and tasteless. It is sterile and can be kept for any length of time, with no deterioration. The plain preparation is not soluble in water, but is readily accessible to the secretory juices of the alimentary apparatus. The iron mixture is soluble. It is resorbable to an extent of more than 90 per cent. of its weight when taken into the body. It can be eaten with food, by itself, or added and mixed with any other food, without changing the taste or flavor. On account of its high degree of resorbability, it is an exceedingly cheap proteid food for the sick as well as the healthy, and must become an ideal albuminous nourishment for the soldier and travellers on account of its small bulk and absolute digestibility. It gives excellent results in all cases of mal-nutrition from insanity, anemia, consumption, gastric and intestinal diseases, acute infection, in convalescence and in all cases of disturbed metabolism. Though insoluble in water, it does not lose any of its good qualities and is preferable to soluble and predigested foods in most cases. He thinks that it is the food of the future, like other artificially manufactured foods, when the population has increased to such a degree that the necessities of life will have to be manufactured. He gives his experience with this albuminous food in cases of healthy persons, and also in invalids.

21. **The Consumptive Poor.**—Knopf's paper is a plea for the sanitarium treatment of the consumptive poor.

22. **Pericystitic Strands.**—While examining patients with the cystoscope, Bierhoff's attention was called to a change similar to columnated structure of the bladder, but differing from it in that it occurred in limited portions of the bladder wall and in female patients who had not suffered from any obstruction to urination, but had in most cases at some previous period suffered from parametritis or allied conditions. Following the suggestion of Dr. Knorr, he examined all cases with previous history of such uterine conditions, as to their vesical symptoms. Of 443 cases, histories of parametritis, etc., were obtainable in 214; symptoms referable to urinary organs in 264; pericystic strands present in 136; no other discoverable cause of symptoms than perivesical changes in 8; perivesical changes, as accessory cause in 67. These pericystitic strands, imitating in some respects the columnated structure of the bladder, are, according to the author, due to uterine inflammations, which extend and involve the walls of the bladder, and the fibrinous strands resulting from the organization and contraction of the inflammatory exudate, pull upon parts of the bladder wall. The characteristic appearance is the presence, over parts of these walls, of sharp, scar-like formations which rise, to a greater or less extent, above the surrounding surface, having a yellowish-white color, and tend to fimbriate at the end. Besides the columnar bladder structures, the contractions of the bladder muscle might be confused with these, but when these occur they appear and then disappear over the entire field of vision and are thus differentiated from the condition described. The recent cases can be treated by measures to promote resorption of the exudate. The later changes are of interest chiefly because they may exert an influence as complicating factors or disturbances of urination or produce vesical hyperesthesia.

23. **The Prevention of Insanity.**—The principal points in Coe's article are the regulation, under medical advice, of marriage and reproduction by persons who have strong family taints of insanity, and the proper education and regulation of life in such cases.

24. **The Tonometer.**—Shaw considers Gaertner's tonometer as a valuable method of ascertaining the degree of blood pressure. The description of the instrument and its use was given in an earlier paper by the author abstracted in The Journal vol. xxxiv p. 415 from the *Medical Record* Feb. 3, 1900.

27. **Carcinoma of the Extremity of the Common Bile Duct.**—After reporting a case of carcinoma involving the end of the common duct, with autopsy, Edes discusses the frequency of these conditions. He thinks that undoubtedly they are more common than often supposed, and quotes the references in the Index Catalogue in support of this view. He thinks that while probably gall-stones play an important part in the etiology of carcinoma of the gall-bladder, we must look elsewhere for the local irritation necessary to set up the same growth in the ducts. The diagnosis is not entirely certain or satisfactory, but is not absolutely impossible. The important point is to determine the exact location of the growth and this can not be done without operation. The possibility of relief by operation is noticed, but the prospects are apparently not usually encouraging by the time the diagnosis is established.

28. **Diphtheria Diagnosis.**—Methods in the Boston Board of Health's pathologic laboratory are described by Hill. A summary of the examinations is given in a tabulated form, and the interpretation of results detailed. The presence of diphtheria bacilli is used as a sort of toxin indicator and the positive diagnosis based upon it. The meaning of the negative report, however, was not considered absolute, and a "no growth" report was used when for any technical reason the examination of the cultures was a failure. He found diphtheria bacilli in about 60 to 70 per cent. of cases clinically designated as diphtheria, and in about 10 or 11 per cent. of those diagnosed as non-diphtheria. The positive report from swab examinations was of the same significance as the positive one from cultures, while the negative report is absolutely meaningless. Since, however, the positive swab results save from fifteen to twenty-four hours of waiting for the results of cultures, it was worth while to employ it even if positive results could only be obtained in 50 per cent. of the cases. The release from isola-

tion in diphtheria is a matter not so easy of decision. It was found that release on one negative culture allowed 30 per cent. of the patients to go out of isolation, while the bacteria are still present, while with two or more consecutive negative cultures only about 1 to 3 per cent. of those released will be still infected. To make sure of absolute non-infection by requiring three consecutive cultures involved so much additional trouble that it was found impracticable.

30. **Infantile Convulsions.**—From the records of the Boston Children's Hospital, Bullard and Townsend find that 1 per cent. of the children applying for treatment came for convulsions; 10 per cent. between 5 and 12 years of age gave a history of convulsions. Cases that appear to be due to some manifest reflex cause may turn out to be true epilepsy. Other cases, where the attacks occur frequently and without apparent cause, may suddenly recover, at least for a considerable period. Children who have had convulsions may be strong and free from nervous tendencies, though the proportion of those who have such nervous tendencies seems to be greater than in those who have not had convulsions.

35.—See abstract in The Journal xxxv, p. 1048.

38. **Adenoids.**—The occasional failure of the disappearance of unpleasant symptoms due to adenoids after their removal, is remarked upon by Huber, who enumerates the possible causes of mouth breathing, such as diphtheria, nasal catarrh, foreign bodies, inflammatory conditions in the nose, traumas, neoplasms, etc. The methods he suggests in these cases are examination for nasal obstruction, the use of boric acid, operation for deflected septum, curetting, and teaching the children to breathe through their noses.

44. **Paralysis Agitans.**—In the conclusion of his paper Taylor says: "I feel myself warranted in expressing the conviction that in most forms of tremor, whatsoever their cause, we may hope to obtain fair amelioration of symptoms, and it may be in some instances, a cure, by carefully regulated and systematized movements. These should be such as shall reestablish the largest degree of elasticity in the tissues which have suffered contractures. They should always include passive extensions and flexions, followed by active repetitions of these acts. The most important movements to overcome the milder forms of tremor, as the senile form, are slow, full forcible extensions. An important part of the treatment is the attainment of normal attitudes. Along with this should be continued conscientious efforts on the part of the patient to acquire full thoracic capacity, and as much elasticity of the lungs as possible. To regain and maintain health and activity in chronic conditions of almost any sort, is conditional upon a fair respiratory capacity constantly exercised."

51. **Chronic Maxillary Empyema.**—Winslow reviews the opinions of authorities, reports cases of antral empyema, and emphasizes the following points: 1. That antral empyema is not only not always, but is not generally, due to dental disease, the contrary view being based upon clinical rather than anatomical observation. 2. Its frequency and the necessity for systematic examination by multiple proof-puncture in suspected cases; latent empyema would thus not be allowed to exist until it makes itself manifest by caries and the apparent causal relation between the two would become much less notable. 3. Unless evidently of dental origin, antral empyema should be treated through the nose until it is certain that complications exist, and we then should investigate through a large opening in the facial wall. 4. The alveolar opening should be reserved for those cases of undoubted dental origin, and for those who refuse the radical operation. Even then the cases should not be referred entirely to the dentist, for they usually take no account of nasal conditions.

60. **Gastric Carcinoma.**—McCaskey reviews the methods of diagnosis of gastric carcinoma with a view to its early operation. The chief symptoms are anorexia, vomiting, pain, hemorrhage and obstinate constipation. However, these are not all constant. The condition of the blood is not different from that of any other serious nutritional disease. Peptonuria, if suppurative processes are to be excluded, is of decided value as indicating the absorption of peptones from an ulcerated surface in the gastro-intestinal tract. He mentions his cardiameter, described before, by which he can determine the presence or absence of ptosis or ectasia. Of the chemical and microscopic signs, the absence of HCl has been proven to be a non-characteristic symptom. Lactic acid has also no pathognomonic significance. Microscopic evidences, however, are of great value, and may be obtained from washings of the fasting stomach or by using the stomach-tube as a sort of curette. Atypical mitosis at present is not regarded as absolutely significant, though especially frequent. Motor insufficiency of the stomach is finally mentioned as evidence of the continued presence of partially digested foods, is pretty constantly present in the early stages of the disease and has been called by Einhorn ischochymia, which is a convenient designation. After the increase of ischochymia, with malnutrition, progressive diminution of free HCl and of peptic digestion, with perhaps the addition of pain, the presence of lactic acid and the Oppler-Boas bacillus with atypical mitosis appear to be the most reliable signs at present available. The early diagnosis of gastric carcinoma is one of the most difficult problems to the clinician.

62.—See abstract in The Journal, xxxv, p. 1171.

63.—Ibid.

64.—Ibid.

68. **Some Mistaken Impressions in Regard to Genito-Urinary Troubles.**—The special mistakes noticed by Dowd are: the belief in the frequency of cystitis due to gonorrhea, the frequency of vaginitis, the recognition of albuminuria and casts as always indicating nephritis, while they occur frequently during urethral inflammation with no other disease, and the common notion of the greater seriousness of syphilis as compared with gonorrhea; he also mentions the common belief that twisting or screw-like formation of urination as it emerges is indicative of stricture, which is not the case.

76. **Bacteriology of the Conjunctival Sac.**—From a review of the principal points of his paper, Jameson sums up: 1. Pyogenic organisms are found in the normal conjunctival secretion, but probably in an attenuated form. 2. Under normal conditions these do not propagate. 3. The normal eye is abundantly supplied with means of antagonizing bacterial growth. 4 Diminished resistance from inflammations and operative interference alter the secretion and probably convert it into a better media for germ life. 5. The secretion of the eye is not in itself antiseptic. 6. Strong antiseptics in the conjunctival sac lower the resistance to germ in vision. 7. Much attention should be given to washing out the residual bacteria prior to operation. 8. As much care should be taken concerning antisepsis and cleanliness in the external preparation of both patient and operator as is adopted in general surgery, as, while the danger of suppuration is more remote, its results would be more disastrous.

77. **Choroidal Sarcomas.**—Posey and Shumway report a case in which they call attention to the following points as of interest: 1. The form of growth—intravascular angiosarcoma—developing from the lining endothelial cells of the choroidal vessels. 2. The early appearance of the glaucomatous phenomena. 3. The marked inflammatory changes and hyaline degeneration of the iris and ciliary body. 4. Acute degeneration of the optic nerve. 5. The advanced age of the patient—70 years.

78. **Homatropin.**—From his experience Jackson concludes that homatropin properly used is a reliable and satisfactory cycloplegic, as effective in children as in adults. The preferred method of applying it is in 2.5 or 3 per cent. solution, a small drop on the upper corneal margin every five minutes until five or six drops have been instilled. Care should be taken to avoid irritation. It rarely produces any symptoms of mydriatic intoxication. The bitter taste is the most notable extraocular symptom.

79. **Vernal Conjunctivitis.**—Fox reports a case of this type of conjunctival inflammation which he treated by grattage with success.

80. **Asthenopia.**—The causes of asthenopia are noticed by Schulin, and among the first he mentions auto-intoxication from the bowels, etc., and after that common rheumatic gouty diathesis. Another cause is sexual disorders, and he mentions cases due to gonorrhea and undescended testicles. One of the most frequent causes is a poorly-darkened sleeping room, especially if the sleeping, from any cause, is not profound. The surroundings of the eye in sleep, especially in young children, deserve great attention. He does not put much faith in the poorly-lighted schoolroom as a cause of asthenopia. What trouble comes from this cause is due to twisting of the vision due to narrow, bright windows. He believes that astigmatism and myopia are not as a rule congenital, but originate in early youth, are binocular in origin, being caused by abnormalities of muscles of both eyes, and that these originate mostly in the night time, during sleep.

81. **Obliterating Hyphema.**—Four cases are reported by Weymann, from which he concludes that contusions of the eyeball, resulting in obliterating hyphema, may or may not be complicated with deeper mischief, but the uncomplicated cases are in the minority. They are apt to be followed by acute glaucoma, the chief cause of the suffering. In the absence of sepsis iritis seldom develops. When the contusing force secures non-infected drainage from the anterior chamber, the reaction subsides in six to twelve hours. The stippling of the anterior epithelium and parenchymatous haze are due chiefly to profound shock to the local lymph-system and clouding does not disappear with the irritation of the intraocular pressure; it often lasts a week or longer. Drawing the contused blood is neither practicable nor desirable, for it clots a few minutes after leaving the vessels, and it shuts off the light and serves as a quasi iris splint. Atropia should always be instilled, not only for dilatation, but for its analgesic effect. Glaucomatous tension should be at once relieved by a cataract knife into the anterior chamber parallel to the plane of the iris. This makes a valvular wound which can be opened at will by compression of the posterior wound lip. For the inflammation he orders 6 gr. of calomel, which has an excellent revulsive effect, and compresses, as hot as can be borne, for thirty minutes out of every hour. These are usually not needed after twenty-four to forty-eight hours, at least not so often. No prognostic promises should be made until the clot absorption is complete. The commonest deeper complications are partial or thorough luxations of the lens, consecutive cataract, iridodialysis, synsechiæ, fundus hemorrhage and detachment of the retina.

88. **Pseudo-phosphaturia as the Cause of Persistent Urethritis.**—Schalek reports a case in which a non-specific urethritis, persisting for years in spite of all local treatment, was relieved when the condition of the urine was detected and proper treatment instituted. The nearest resemblance which he finds to the present case was in one reported by Klotz, where, after the cure of gonorrhea, in which repeated examinations failed to find the germs, phosphaturia brought on anew an inflammation of the bladder and urethra. The condition in Schalek's patient is called pseudo-phosphaturia, as no excess of phosphates was present, but it still had the general symptoms of phosphaturia.

89.—See abstract in The Journal of January 12, p. 126.

90.—**Septic Affections of the Kidneys.**—The methods of treating over-alkaline acidity of the urine are first noticed by McArthur, who calls attention to the importance of using benzoic acid, free from an alkaline base, in the treatment of ammoniacal urine. Other remedies useful in acidulating urine and exceeding in value dilute mineral acids are salol and similar derivatives of the benzol group. To check bacterial growth, the most trustworthy urinary antiseptic is urotropin. To render the urine alkaline in reaction, as when the gonococci or bacilli coli invades the kidney, the bicarbonates should not be used. Of the neutral salts the vegetable acids are the best. He classifies the specific affections of the kidney into acute and chronic, and those again into ascending and hematogenous, or descending. The acute ascending infections of the kidney are septic and gonorrheal, and for treatment the better antiseptics mentioned should be used. If these fail, the use of ureteral lavage, and if this also fails there remains nephrostomy as a final resource. The descending infection of the kidney is occasional and may be from pyemic infarcts, but is more frequently due to infection from typhoid and tuberculosis. As a positive causative factor in chronic ascending infection, we have the same micro-organisms as in the acute, but their invasion is generally due to some mechanical obstruction to the free escape of urine, and attention should be given to its removal. With the restoration of free exit, many a case of renal infection has become quiescent. Relief of prostatic hypertrophy or stricture may cause the kidney trouble to disappear. If the renal obstruction has become so great that the removal of the kidney is required, the functional activity of the other kidney and its freedom from disease should be assured, as well as the worthless character of the kidney to be removed. Among the chronic descending, i. e., the hematogenous, varieties we have chiefly the caseous nodules of chronic tuberculous processes.

99. **Urethral Curettage.**—Walker favors the use of a special curette, which is very long and slender, with a rather cupshaped end 2 mm. in diameter and very sharp, in curetting for posterior urethritis; he has had good success in long-standing cases. Preparatory to the operation he irrigates thoroughly with a 1 to 40,000 bichlorid solution, and then a 4 per cent. cocain solution, which is instilled and held five minutes. The endoscope is introduced and the diseased spot localized. The curette is next applied with the complete removal of diseased tissue, including the epithelial layer and submucous tissue, if necessary. After this is done a 10 per cent. solution of nitrate of silver is applied to the spot by means of a cotton pledget. Following the treatment there is usually profuse purulent discharge, for which he has used, twice daily, an irrigation of 1 to 50,000 bichlorid solution.

106.—This paper was considered editorially in last week's Journal.

111. **Stereoagnosis.**—Two cases are reported by Burr, whose conclusions are as follows: The ability to recognize objects by handling them depends upon the integrity of the afferent nerves, the cortical sensory area, and the cortical perceptive area. Diseases of either of these will affect the function. We may dismiss from consideration the inability to recognize objects because of disease of the sensory nerves or tracts in the cord, medulla and pons. Such inability is due to anesthesias of one or more types. There is a distinct area in which the sensations of handling objects are grouped, which form tactile memory impressions. This, the tactile perceptive area, is in the parietal lobe. This is not the same thing as the sensory area, though it may be located within the boundaries of the latter. It would probably be well to limit the term stereoagnosis to cases where the inability to recognize objects by contact is due to some failure of sensation caused by brain disease either in the cortical sensory area itself or in the fibers going to it. Tactile amnesia includes cases in which, on account of disease in the tactile perceptive area, the tactile memory images are destroyed. It is not infrequently associated with mind blindness, and it is probable that in recognizing objects by handling we recall, from memory, a more or less faint recollection of its visual appearance. Auditory memories are less frequently recalled because less frequently needed. What form of sensation is the most necessary for the recognition of any given object depends on its qualities. Tactile anesthesia, if sensibility to stronger pressure is preserved, causes little or no difficulty. The space sense, the localizing sense, and the sense of position are probably the most important, for by them we learn the form of objects. When, in the cerebral palsies of children, there is an inability to recognize objects in the paralyzed hand, it is often due, as Oppenheim states, to the fact that tactile memory images were never acquired. Granting that the tactile perceptive area is not the same as the cortical sensory area, such cases as the second reported can be explained upon the hypothesis of a lesion cutting off the fibers joining the two areas.

117. Foreign Bodies in the Peritoneum.—Beck reports cases in which non-absorptive silk ligature was sloughed through into the bowel or bladder or other hollow organ of the body, and he concludes that silk ligatures and sutures are not as harmless as usually regarded, and that more absorptive material should be preferred. If non-absorptive silk material is used, the thread should be small in size, and interrupted suture should be preferred to the continuous one, as the latter takes a longer time to slough off. Symptoms arising from a buried suture must always be borne in mind, and if sloughing is suspected a way should be opened for the thread so that it may not take a dangerous route. Some of the cases show that even the absorptive sutures are liable to this accident.

120. Pryor's Vaginal Hysterectomy.—Crouse reviews the indications for the operation and describes the technique. Pryor's operation, he says, has been evolved from Doyen's anterior hemisection, Muller-Quenu's total hemisection, Segond-Pean's preliminary liberation of the uterus, thus guarding the ureter, Czerny's twisting of the pedicle to 180 degrees, with the placing of the forceps from above downward. It embodies careful covering of the stump, thus securing the extraperitoneal retention of the pedicles; it is the Pean morcellating method in fibroids and large uteri. But after all, it is Pryor's, and an American operation by an American operator. The *mortality in Pryor's hands has been nil.* Its advantages over the other vaginal procedures are: 1. No stitches nor ligatures, and increased speed and ease. 2. The use of clamps which can be applied to dense, short ligaments where ligatures are not applicable, as in cases in which the parametria are very much thickened. Clamps can be placed closer to the outer part of the broad ligament if this is at all infiltrated, than it is possible to place ligatures. 3. It has all of their good and none of their bad features.

140. Protonuclein.—Canan has attempted to classify his cases of tuberculosis, keeping a record of all that were treated with protonuclein. The classification adopted was that of circumscribed apyrexia, circumscribed febrile tuberculosis, tubercular laryngitis, tubercular broncho-pulmonitis, and tubercular broncho-pulmonitis with cavities. In each case the bacilli were found. The patients were from all walks of life, between the ages of 60 and 70 years, and of both sexes. Of the apyrexia cases, 39 were treated, and 5 were cured, 18 improved, 9 remained about the same, and 7 grew worse and died. Of the tubercular laryngitis cases, 27 were treated, 3 cured, 12 improved, 6 stationary, and 6 died. Of the circumscribed febrile, 32 were treated, 8 cured, 16 improved, 5 stationary, and 3 died. Twenty-one cases of tubercular broncho-pneumonia with cavities were treated, 4 cured, 10 improved, 3 remained stationary, and 4 died. He claims that this treatment, while not a specific for tuberculosis, can do very much good and save many lives. There is no danger of its dealing the last blow to an already tottering structure, as is so often the case with tuberculin. While the treatment was in progress, he noticed: 1. That pyogenic associations are not acted upon by protonuclein. 2. That negative results are manifested when administered to patients with disease so far advanced that the cells are unable to respond to the stimulus of the drug. 3. That when improvement once begins under this treatment it generally continues. He reports one case in which cavitation had occurred, and improvement was very striking.

Combined Gynecologic Operations.—Owing to a combination of errors in typewriting and proofreading, the notice of Sutton's article, "Combined Gynecologic Operations" (page 599, The Journal, March 2), contained two absurd errors: For "tracheotomy," read trachelorrhaphy, and for "craniotomy," laparotomy.

FOREIGN.

British Medical Journal, March 2.

Some Points Relating to Varicocele. William H. Bennett.—The writer notices the hypochondriasis and mental symptoms generally as occurring with varicocele, and describes its varieties. About 7 per cent. of men will be found to suffer from this condition, and 80 per cent. of that percentage will be affected on the left side only, about 15 per cent. on both sides, while occasionally the right side only is affected. The percentage of cases in which it gives trouble, excepting from mental causes, is small, and quack literature is responsible for many of these latter. He recognizes two forms, in one of which the condition appears like a bag of worms, and this is the commonest type. Excepting in cases of injury, it is perfectly harmless. There is another kind, however, where the veins are very small and massed together, and very numerous around the testicle, the upper part of the cord being normal. This kind may produce trouble in the way of atrophy of the testicle, influencing of nutrition, the result of abnormal growth of the veins. For the relief of the condition radical operation is advisable, and the method that he follows is a complete division of the whole of the spermatic cord, with the exception of the vas deferens. He has performed this operation more than two hundred times. It is the best method for preventing recurrence of the condition. He makes an incision of one-half to three-quarters of an inch, severs the cord on a level with the upper border of the root of the penis, i. e., over the external abdominal ring, and pulls out the whole of the spermatic cord excepting the vas deferens, by means of an aneurysm needle or hook, which is passed between the vas deferens and the rest of the cord. The veins here are not dilated—an essential point—and are only seen through the translucent fascia; inside the fascia, with the veins, is generally the spermatic artery. He pulls the loop out through the wound, the next step being to tie a stout ligature of carbolized catgut around it in two places. A considerable piece is excised and the two stumps are united by a kangaroo or catgut suture, considerable structure having been removed. He intentionally includes a segment of the spermatic artery in the removed section, and claims that the vessels which accompany the vas deferens, together with a few small vessels derived from the subvaginal cellular tissue, are sufficient to nourish the testicle. When he first began to perform the operation, he feared wasting of the organ, but this has not followed. The spermatic artery is a large vessel for the work it performs, and is enlarged still more in varicocele. If it is left there would be engorgement of the organ for the time being, which might lead to fatty degeneration. On the other hand, if the main artery is obliterated, the blood carried by the artery of the vas deferens and other small arteries is sufficient to nourish the testicle without producing engorgement.

Influence of the Dwelling upon Health. John F. J. Sykes.—The question of the influence of the dwelling upon health is discussed by Sykes, who finds the increased density to the square space causes an increased general and special mortality in unsanitary areas. The general mortality is increased at all ages, but particularly under one year. The special mortality shows the greatest increase in infectious diseases, the next greatest in tuberculous diseases, the next in respiratory disorders. If all infectious cases be promptly removed to hospitals, and disinfection and cleanliness enforced, the increase will take place in the reverse order, the respiratory diseases first, the tuberculous next, and the infectious third. In a series of industries arranged in order of the purity of the air considered apart from dusty occupations, the order would be that of the mortality of diseases of the respiratory organs together with phthisis. The greater proportion of the diminution in phthisis mortality among females, the more indoor of the two sexes, is significant of improvement of dwellings, and it is more notable since the greater diminution has taken place between the ages of 15 and 45 years, the child-bearing period, when women are most sedentary. The size of the dwelling has an influence on the mortality. The mortality in dwellings of one room may be nearly double that of larger dwellings, and this is especially noticeable in tuberculous disease. The most important factor in the spread of pulmonary tuberculosis is the predisposition to this condition, acquired as well as innate. Moreover, the acquired or innate predisposition can be controlled to a large extent by the hygienic conditions. The phthisis death-rate shows a close relationship to the density of persons in cubic space, and the disease seems to stand in the same relationship to respiratory pollution as typhoid does to filth pollution. The effects of back-to-back houses, as constructed in the north of England, are also stated, and in such the death-rates from all causes are greatly increased. The death-rate in dwellings over stables is also specially noticed, and the conclusions are that occupants of these have a high birth-rate and high mortality under 1 year and at all ages; high death-rates from pulmonary disease, both in infants and adults, and high in zymotic diseases, especially diarrhea and diphtheria. Much of this is attributable to drafty conditions of stables affecting the dwellings over them.

The Lancet, March 2.

Influence of Ozone on the Vitality of Some Pathogenic and Other Bacteria. ARTHUR RANSOME AND ALEXANDER G. R. FOULERTON.—These authors have experimented on the action of ozone: 1. On the vitality of certain pathogenic and saprophytic bacteria. 2. On the virulence of bacilli of tuberculosis. They detail their experiments, referring to former workers, especially Downs, Blunt and Ohlmüller, and conclude that ozone in the dried state, and in such strength as used, has no appreciable action on the vitality of the various bacilli experimented with, their results being in accordance with those of Sonntag and Ohlmüller, nor did prolonged exposure to the action of ozone diminish in any way the pathogenic virulence of the bacilli of tuberculosis in the sputum. Single experiments appear to show that it has little if any effect on the pathogenic virulence of the bacillus mallei and the bacillus anthracis. On the other hand, one experiment appears to confirm the conclusion arrived at by Ohlmüller, as to the bactericidal properties of ozone when passed through a fluid medium containing bacilli in suspension. The non-activity of ozone as a disinfectant in the dried state, compared with its action in the presence of water, suggests a superficial resemblance to other gases, such as chlorin and sulphur dioxid. The authors, therefore, consider that in the dry state and under natural conditions ozone has no effect on the bacteria, and any purifying action which it may have in the economy of Nature is due to chemical oxidation of putrescible organic material, and it does not hinder the action of bacteria which are working toward the same thing in their own way.

Quantitative Estimation of Bactericidal Power of Blood. A. E. WRIGHT.—In a previous communication dealing with the quantitative diminution of the bactericidal power of the blood, Wright described the technique of the method, by using a series of graduated dilutions of serum mixed in capillary culture-tubes, with equal volumes of liquefied gelatin and cultures containing in suspension the proportionate number of species of micro-organisms to be tested. The questions considered in the present communication are whether, where no colonies are developed in these cultures, it may be inferred that the bactericidal effect has been complete and the question of the influence exerted on the results of the quantitative estimation of the bactericidal power by the greater or smaller number of bacilli in the volume of culture brought in contact with the serum. The experiments undertaken to answer these questions are detailed and methods described. The conclusions the author reaches is that what was measured by the method described in his former article is rather the total antibacterial power of the blood than the bactericidal power proper. Where it is desired separately to estimate the bactericidal power, this can be done by making a series of graduated dilutions of bacterial cultures and growths, and by mixing, in the manner described in the present communication, one volume of each of these with one volume of undiluted, or, if necessary, diluted serum. When this last method is employed, and the bacteria in the cultures have been enumerated in the manner indicated, a convenient arithmetical expression for the bactericidal power is obtained by the specific number of micro-organisms, which 1 c. mm. of serum is capable of killing. Where—as in the case of the staphylococcus and apparently also in the case of the streptococcus and bacillus of plague—we have to deal with bacteria which are not killed off, or are killed off only in small numbers, by the normal human blood, or, again, where we are dealing with conditions (such as those frequently met with in convalescents from typhoid) when the blood has lost much of its normal bactericidal power, the gelatin method, measuring as it does the combined inhibitory and bactericidal power, may appropriately come into application.

Method of Distinguishing Bacillus Coli Communis from Bacillus Typhosus by the Use of Neutral Red. WILLIAM HUNTER.—The author finds, from his studies of the subject, that: 1. The bacillus coli communis possesses to a marked degree the power of reducing neutral red, producing a superb canary-yellow, fluorescent color of the medium. 2. The so-called bacillus enteritidis of Gaertner also produces this reaction, and is probably only a variety of bacillus coli communis. 3. The bacillus typhosus never possesses this power of reduction. 4. The common pathogenic micro-organisms do not give this reaction. 5. By means of neutral red it is possible, within from twelve to twenty-four hours, to diagnose the presence of bacillus coli communis with absolute accuracy. Finally, as far as his experience goes, it is possible to diagnose, by means of neutral red, the true coli group from the typhoid group of micro-organisms.

Archives Gen. de Med. (Paris), February.

Subacute Adenitis of the Groin. MANON AND GANDY.—An adenitis in the inguinal region, remarkable for the multiplicity of the foci and the protracted course, has been described by various authors. The pus shows no micro-organisms on direct examination and no cultures can be derived from it, consequently the affection has been assumed to be a simple adenitis with intraganglionary purulent foci. The authors of this communication state, however, that it is exclusively and probably invariably tubercular and promptly heals after extirpation, curetting and packing with iodoform gauze. Animals inoculated with the pus exhibited local and general manifestations of an attenuated tuberculosis in every case. Four out of a number of clinical cases are described in detail.

Two Cases of Primary Carcinoma of Biliary Passages. LECÈNE AND PAGNIEZ.—Two new cases of primary juxtahepatic carcinoma of the biliary passages are described, and the ten cases already in the literature. They were all circumscribed but inoperable, obstructing the large biliary passages at their emergence from the liver. The symptoms were those of chronic icterus from retention.

Bulletin Medical (Paris), February 13.

Influence of Spinal Cocainization in Hastening Delivery. DOLÉRIS.—Fifty obstetric cases in which spinal cocainization was employed have convinced Doléris that cocain has a directly aggressive action in stimulating the uterine muscle to contraction. He affirms that we have in spinal cocainization a new means of inducing premature delivery, on account of this oxytocic action on the motor nerves of the uterus. It is, therefore, contra-indicated for operations during pregnancy on account of the danger of inducing abortion. He found it invaluable in two cases of uterine inertia, and suggests that it may be useful in eclampsia, in which rapid delivery is often desirable.

Gaz. Hebd. de M. et Ch. (Paris), February 17.

Mercurialized Artificial Serum in Syphilis. BAILEY.—Experiences with 70 syphilitics treated with mercurialized serum are described. The action was as energetic as that of calomel, and it was tolerated by the patients as well as grey oil, while the administration is simpler, easier and much less painful for the patient. Clinical recovery followed an average of 3½ injections. The formula is: mercuric bichlorid, 5 gm.; sodium chlorid, 2 gm.; boiling distilled water, 200 gm., and, when cooled, carbolic acid, 2 gm. Only thirteen of the 250 injections were painful. The amount injected averaged 20 c.c. during the week. Slight stomatitis was noticed in four cases.

Journ. de Physiologie (Paris), January.

Pathogenesis of Acute Edema of the Lung. J. TEISSIER.—Nervous influences favor the production of acute edema of the lung in animals by dilating the capillaries of the parenchyma. This influence is more pronounced in cases of preceding intoxication entailing a tendency to serous suffusion. The edema may occur without increased pressure in the left ventricle, but never without a simultaneous increase in the pulmonary pressure.

Protecting Power of the Skin. J. Lefèvre.—The experiments reported seem to demonstrate that the protection afforded by the skin is the same as from a covering of wood or cork about 2 mm. thick. It protects against cold 750 times less effectively than a layer of still air 2 mm. thick, but it protects 2280 times better than a silver envelope and 1750 times better than copper. The conductibility is less by one-half at 5 than at 30 C.

Thyroid Grafts. H. Cristiani.—The thyroid gland transplanted whole or in portions in the peritoneum, or under the skin of an animal of the same species, lived and developed histologically, apparently the same as if it had remained in its original environment.

L' Obstetrique (Paris), January.

Vomiting of Pregnancy with Ovarian Cyst. L. Lapeyre.—Uncontrollable vomiting does not occur in pregnancy complicated with an ovarian cyst, with any more proportionate frequency than in simple pregnancy. When it occurs it is due to the pregnancy and not to disturbance from the cyst. A case is described in which the cyst was removed in the hope of arresting the vomiting, but no relief was experienced until labor was induced. In urgent cases the patient can be delivered at once and the ablation of the cyst postponed. Certain ovarian cysts, Lapeyre adds, are better removed through the vagina, especially during the course of a pregnancy.

Revue Mens. Mal. Enf. (Paris), January and February.

Abscess of Liver from Contusion in Children. C. Oddo.—Four of the nine cases of traumatic abscess of the liver in children, collected by Oddo, terminated fatally. The symptoms sometimes appear at once after the contusion, or a period of latency may intervene. If the traumatism directly affected the liver, the abscess is primary, but occasionally it occurs consecutive to injury of some other region of the abdomen. Fever may be remittent or continuous. The cachexia is rapid and pronounced. The abscess tends to perforate through the skin or into the respiratory apparatus, possibly directly into the bronchi. It may entail a purulent pleurisy and produce a subdiaphragmatic pyo-pneumothorax. Surgical or spontaneous evacuation is followed by rapid improvement.

Alterations in the Bones in Rhachitis. L. Spillmann.—Histologic study of the bones of forty-four children of various ages indicates that rhachitis passes through three stages in its course; latent, deformity and convalescent. In the second stage vascular neoformation is the chief lesion. The proliferation of cartilage cells and disturbances in ossification are secondary. The rhachitic process is essentially an osteitis, both juxta-epiphysial and subperiosteal.

February.

Purulent Rhinitis in Scarlet Fever. C. Laprée.—A purulent coryza entailed complications which proved fatal in eighteen out of thirty-nine cases in Laprée's experience. The statistics of others also indicate that purulent coryza is the most frequent cause of death in scarlet fever. It may be preceded by a simple coryza, or may appear suddenly without warning, the second or third day, or as late as the tenth day. It usually coincides with severe sore throat and general symptoms. It aggravates the disease, keeps the temperature above 38.5 C. for several days and debilitates the patient. Treatment should be prompt and energetic, destroying the germ in the local infection before it infects the entire organism. The nasal fossæ and throat should be copiously rinsed with an antiseptic, preferably peroxid of hydrogen mixed with an equal volume of a 4 per 1000 solution of sodium bicarbonate. This irrigation should be repeated three or four times a day and at least twice at night. Afterward the nostrils are plugged with cotton impregnated with a mentholized or resorcin salve. This treatment may arrest the rhinitis in thirty-six hours, but it usually continues for three days. If the discharge persists after the fifth or sixth day, an irrigation morning and night is usually sufficient. Laprée recommends irrigation through a Nélaton sound in which three holes have been cut about the center with the scissors. The sound is inserted through the nose and passes out at the mouth.

Revue Scientifique (Paris), February 23.

Pain from the Surgical Point of View. J. Lucas-Championnière.—Pain causes reflexes of all kinds and may survive the cause that produced it. Pain begets pain. The longer it lasts the more obstinate it becomes. In examining a patient these facts should be borne in mind and every effort made to refrain from causing pain, as it is liable to induce reflex action which will mask the symptoms that are being investigated. "By mobilization and massage, pain is abolished in 80 per cent. of all cases of fractures managed according to this method."

Berliner Klin. Wochenschrift, February 4.

Oxygen in Exhaustion of the Neurons. Max Verworn.—In a study of fatigue and exhaustion Verworn shows that the neurons become fatigued and exhausted just like the muscles, and, like them, throw off waste matters, the products of their metabolism, which, if not removed, paralyze their further action. He relates experiments with frogs under the influence of strychnin. When so exhausted that no further convulsions were possible, he was able to restore the original energy to the convulsions by the establishment of an artificial circulation with salt solution mixed with pure oxygen. The former alone had no effect. He therefore concludes that exhaustion is due to the using up of the oxygen in the neurons and cells. He believes that conditions of fatigue and exhaustion are the chief factors in neurasthenia, or they may be the actual cause of the entire symptom-picture. His synthetic production of the conditions that create fatigue generated a symptom-complex closely resembling neurasthenia, and in all his experiments it was cured by the direct application of the oxygen in salt solution in artificial circulation.

Centralbl. f. Chir. (Leipsic), March 2.

Improved Spinal Cocainization. K. Schwarz.—Instead of cocain, Schwarz uses tropacocain, and reports that in sixteen serious operations performed with the subarachnoid injection of tropacocain, the analgesia was perfect and there was not a trace of the inconveniences observed after the use of cocain for the purpose, no pallor, vomiting, headache, vertigo nor rise in temperature. The general health was not affected in the slightest in any way, either during or after the operation. Analgesia to the knees was obtained with 3 cg. With 4 cg. he curetted an osteomyelitic hip-joint and removed sequestra in a very sensitive patient, without causing the least pain. The analgesia was complete for radical hernia and hemorrhoid operations, with 5 cg. This amount also proved sufficient in a uroseptic patient, 66 years of age, much debilitated, with complete retention of urine for two days in consequence of a traumatic stricture. The operation lasted two hours and the analgesia was complete to the end.

Restoration of Co-ordinated Movements After Nerve Crossing. R. Kennedy.—Experiments on five dogs showed that the nerves supplying the flexor muscles in a foreleg could be severed and sutured to those supplying the extensors, with the result that in spite of this changed innervation, the animal gradually recovered the normal use of its limb and was able to make voluntary co-ordinated movements with it as before. The interval before function was re-established was the same as in case of simple section and immediate suture of the nerve. The nerve-centers which formerly innervated an antagonistic group of muscles now serve for the other group and the change extends even to the nerve centers, which change their task while retaining their excitability: the cortical centers duly impart impulses to the muscles that result in co-ordinated movements in their new peripheral domain. Applying these facts to human pathology, a woman was cured of facial spasms by uniting the peripheral stump of the severed facial nerve with the trunk of the spinal accessory, at the point where the latter emerges beneath the posterior belly of the digastric muscle. The interposing digastric prevented reunion of the severed ends of the facial nerve. Paralysis of the right side was the immediate result, but this gradually subsided. By the forty-ninth day there was reaction to faradic stimulation and partial closing of the lids. Fifteen months after the operation the face feels normal; there has been no recurrene of the spasm; the conjunctiva, muscles and lacrimal secretion are normal, and the movements of cheek and mouth muscles are satisfactory although not perfectly co-ordinated. There is no atrophy of the face; the tonicity of the muscles and their outlines are normal. There is muscular insufficiency in whistling, blowing and raising the eyebrows, but the labials are distinctly pronounced and the buccinator prevents accumulation of food between the jaw and cheek. When the arm is suddenly raised the face contracts on that side for a moment. The impulse for the trapezius is dispatched first to the face. The article concludes with the suggestion that section of a nerve supplying a paralyzed muscle, and union of this nerve with a neighboring nerve, even of an antagonistic group, may restore function to the paralyzed muscle.

Deu. Archiv f. Klin. Med. (Leipsic), December.

Experimental Study of Gout. M. Freudweiler.—Subcutaneous injection of sodium biurate produced lesions in animals, in Freudweiler's previous experiments, which corresponded anatomically in every particular to typical arthritic lesions in gout. The necrosis of the tissues was not a foreign-body necrosis but a secondary process, the result of the specific, toxic action of the urate. Under the administration of large amounts of acids or alkalies, the gout nodules rapidly disappear, and phagocytic processes are probably the chief factors in this retrogression of the nodules. His latest research tends to establish that in gout there is a permanent saturation of the organic juices with uric acid, entailing a constant tendency to local inflammation. If an inflammatory process culminates at a time when the organic juices happen to be supersaturated with uric acid—owing to improper diet or other causes—then the uric acid is deposited in crystals in the exudate of the inflammatory process. This is the origin of the typical gouty nodule with consecutive necrosis of the tissues involved. The precipitation of the uric acid relieves the organism from the superfluity, and no further trouble is experienced until again an acute local inflammatory process coincides with a maximal saturation with uric acid. The latter may also be deposited at points free from inflammation, where conditions are unfavorable for its retention in solution. The essence of gout, however, as a typical constitutional disease, is not the accumulation of uric acid in the fluids, but is to be sought at the points where uric acid is elaborated.

Deutsche Med. Wochenschrift, February 28.

Transmission of Tuberculosis by the Semen. F. F. Friedmann.—The experimental research described has been aided by funds from the Bose endowment for scientific research. Friedmann has succeeded in transmitting tuberculous infection directly with the semen, and when the animals were killed six days later, the tubercle bacilli were found ensconced in the embryo, with none loose in the uterus or vagina. One or two drops of a very weak suspension of tubercle bacilli were injected into the vagina of female rabbits directly after coitus, following soon after a litter had been thrown. More than 500 longitudinal sections were made of the embryo and uterus of the animal killed the sixth day, before the embryo had become attached to the uterine wall in any way. The bacilli were found inside the cell of the embryo in every instance, and in one case a nest of them was discovered. The remainder of the bacilli had evidently been eliminated by the vaginal secretions, only two were found outside of the embryo and these were close to it. The question whether the non-motile bacteria were carried by the spermatozoa into the ovum is still undecided, but the experiments demonstrate beyond all doubt the possibility of the transmission of bacteria with the semen directly into the embryo, without the participation of the maternal organism in any way.

Suppuration in Typhoid Fever. A. Prochaska.—During the last three years this author has seen twenty-two cases of abscess formation in typhoid fever, mostly deep lesions, with multiple foci in several cases. One patient died. It is possible that pyogenic germs present in the body may acquire unwonted virulence under the influence of the typhoid infection. As such micro-organisms are swept away in the circulation, the abscesses may develop at points remote from their primary localization.

Spontaneous Gangrene in Young Men. Wulff.—Two cases are described in detail, but Wulff has observed five in all. Israel has also seen a number in the last few years. The patients were all Jews from Russian Poland, between 20 and 35 years of age, free from hereditary or syphilitic predisposition. All smoked cigarettes to excess, thirty or more a day for years. The gangrene first appeared in the toes in all but one case, and was preceded by years of rheumatic pains in the leg with chilliness, tingling and sluggish circulation when the leg was dependent. Wulff is inclined to attribute the etiology to abnormal vasomotor constriction, inducing secondarily the endarteritis and thrombosis which are the essential factors in senile gangrene.

Deu. Ztft. f. Ch. (Leipsic), January.

Rydygier's Experience with Operations on Stomach.—Since 1880 Rydygier has performed 100 operations on the stomach. The fatalities have been 17 in 25 cases of pylorectomy for cancer, and 4 in 7 non-cancerous affections; 16 in 38 gastro-enterostomies for cancerous and 5 in 26 for non-cancerous affections; 1 in 3 gastrostomies for cancer and 1 successful case of non-cancerous dilatation of the pylorus. The majority of the deaths were due to weakness and shock; 11 to pneumonia; 7 to peritonitis; 2 to hemorrhage and 7 to unknown causes.

Peptic Ulcer After Gastro-enterostomy. A. Neumann.—Seven cases have been recorded during the past eighteen months, in which a peptic ulcer has developed in the jejunum consecutive to gastro-enterostomy. Neumann has recently observed another case. The patient had suffered from chronic gastritis, dilatation and hyperchlorhydria, with stenosis of the pylorus. Gastro-enterostomy was done, and later an entero-anastomosis. He returned after a year with symptoms of a gastric ulcer adherent to the anterior wall of the abdomen. The tumor was excised. Six months later the cicatrix became perforated. The defect was closed with a pedunculated flap, the skin side toward the stomach. In a few days this flap was digested and the gap opened directly into the stomach and into the lumen of the intestine on each side. As the stomach and pylorus were now of normal shape and size—the stenosis having probably been spasmodic—the gastro-enterostomy was undone, the stomach closed, a portion of the jejunum resected and the abdominal defect closed with a piece of omentum inside and a skin flap outside. Neumann points out that the jejunum is not made to resist the action of acids and that, consequently, when brought directly in contact with them, as in a gastroenterostomy, favorable conditions for a peptic ulcer are produced. If the stenosis of the pylorus is not organic, jejunostomy should be preferred to gastro-enterostomy. Four of the seven cases mentioned above succumbed to the results of the perforation into the abdominal cavity.

Monatss. f. Prakt. Derm. (Hamburg), November.

Alcohol Pencils in Dermatology. P. G. Unna.—These pencils are recommended by Unna as a very convenient method of applying alcohol in skin affections. He is convinced that we have in alcohol a harmless, mild and actively efficient disinfectant when used intermittently, not continuously. To prevent too rapid evaporation he applies it in the form of a thin, invisible varnish. This is accomplished by casting it in moulds with 5 or 6 per cent. of sodium stearate, in the shape of a pencil, and rubbing this pencil over the surface to be treated. The pencil is wrapped in tin-foil when not in use.

Muenchener Med. Wochenschrift, February 26.

Hereditary Transmission of Tuberculosis. J. Goldschmidt.—The English colony in Madeira was composed almost exclusively of persons with tuberculosis seeking a temperate climate. It has numbered about 600 souls, and yet, during the entire 19th century, only one of the descendants died of pulmonary tuberculosis, possibly acquired in a residence of several years abroad. The community now consists of about

150 persons. In contrast to this experience of the non-transmissibility of tuberculosis from the progenitors, Goldschmidt cites twenty-eight families of various nationalities in which both parents were free from the slightest trace of tuberculosis. In 21 of the families, all the children died of tuberculosis between 15 and 35 years of age; in 5 others most of the children died, and in 2 others two children in each were affected with a tubercular affection of the bones. He points out that in 21 of these families the fathers were syphilitic. There were only 8 abortions in the record of all the families. He suggests that the paternal syphilis might have induced a predisposition to tuberculosis. He also is inclined to believe that the parental tuberculosis in the Madeira colony conferred a sort of immunity on the children.

Jolles' Improved Ferrometer.—Comparison of the readings of the hemometer and of the ferrometer affords valuable information in many cases, not to be derived from either alone. The hemometer shows higher and lower amounts of hemoglobin in icterus, corresponding to the progress and subsidence of the affection. The more intense the icterus the greater the difference between the readings of the hemometer and of the ferrometer. In hemorrhagic diseases the hemometer indicates a high figure, while the blood-iron is diminished both comparatively and absolutely. Two periods in childhood seem to be distinguished by a special abundance of iron in the blood, the period of transition from nursing to a mixed diet and puberty. It is important in treating various affections to determine the amount of blood-iron as well as the hemoglobin and the number of red corpuscles. For these and other reasons Jolles considers his improved ferrometer a valuable contribution to scientific methods of investigation. He has simplified and adapted it to Fleischl's hemometer, so that the latter instrument with a slight addition, can be made to serve two purposes. The blood is evaporated, incinerated and treated with potassium sulphate as by the original method. One of the cylinders is placed in front of the glass wedge of the hemometer and the other over it. The wedge is then moved along until the fluid in both tubes is of the same color. The illumination must be from a candle or lamp, not an electric light. It should shine on the reflector only, and he recommends a covered box for the lamp, open at the back, with one small square aperture opposite the reflector. This improved ferrometer is so simple and so easily managed that he trusts it will be found of general clinical utility. He has already come to the conclusion that the amount of blood-iron in normal conditions averages higher than the figures he has previously announced—.0413 to .0559 in 100 c.c. of blood.

Therapeutische Mon. (Berlin), January and February.

Treatment of Peritonitis with Alcohol Compresses. MEYER.—The advantages of local application of alcohol have been proclaimed by Buchner and others from time to time. By the influence of the alcohol on the nerves of the affected region, strong hyperemia is induced and leucocytes charged with bactericidal enzymes are attracted to the spot and, by their proteolytic action, may destroy the elements of the cutis and lead to the perforation of the purulent collection. Meyer describes a severe case of tubercular peritonitis in which circumstances rendered surgical intervention impracticable. He applied compresses of alcohol, and in two weeks fluctuation was evident and a week later pus perforated through the umbilicus. The child recovered and has gained remarkably in weight.

Salol in Diabetes.. TESCHEMAYER.—In accordance with Ebstein's advice, 1 gm. of salol was administered four times a day, to eight diabetics. In three severe cases no effect was perceptible, but in the others the sugar vanished completely from the urine during the treatment and for the several days afterward before the patients were lost to view. While the urine was under the influence of the salol, the plane of polarization was deflected to the left.

February.

Igazol in Treatment of Tuberculosis. HOFFNER AND BEERWALD.—The communication of the first writer reports negative results in ten cases from the action of Cervello's method of treating pulmonary tuberculosis with iodoform-formaldehyde, but Beerwald, on the other hand, asserts, from an experience with twelve patients, that it is the best of all methods known to date for treating bronchitis with secretion, whether tubercular or not. Ten of his patients were very much improved by the treatment.

[According to Ehrenfeld, in the *Wien. Med. Woch.* (January 26 and February 2), thirty-four patients with pulmonary tuberculosis—all severe cases—were treated according to Cervello's method inhalations of iodoform-formaldehyde-igazol. Improvement was evident in 53 per cent., including 4 clinical recoveries, 8 marked improvements, and 6 patients somewhat benefited; 8 patients died.—ED.]

Therapie Der Gegenwart (Berlin), February.

Quinin in Typhoid Fever. C. BINZ.—To supplement Erb's communication on this subject, abstracted in THE JOURNAL of February 9, p. 412, Binz recalls his experience during the Franco-German War, when he treated some of his soldier-patients with quinin and others without. Of the latter, 11 out of 46 died, a mortality of 23.81 per cent., while only 6 of the 97 to whom he administered 1 gm. of quinin every evening died. He always prefers the hydrochlorate to the sulphate, as it is more easily dissolved and absorbed in the stomach.

The "Klopfen" Method of Treatment of Pulmonary Tuberculosis. J. FRIEDLAENDER.—An unscientific work has recently been published proclaiming the advantages to be derived from slapping the thorax all over with a silver paper-cutter. Friedlaender has been making a scientific study of the method as practised empirically for years by the author, Erni, and finds that it is actually a powerful means of mechanically stimulating, shaking up the stagnant conditions, and thus promoting spontaneous healing of tubercular processes. The thorax is bared and greased. The silver knife is 1.5 cm. wide, and weighs 100 gm. It is held with the wrist loose and allowed to fall at rhythmic intervals on the surface of the thorax, going systematically over the entire expanse, front and rear, avoiding the sensitive points, the mamma, sternum, clavicles and spine. The sitting lasts ten to fifteen minutes with a respite of two or three, repeated every second day for ten to fifteen times and resumed after a pause of a few weeks. The skin smarts during the slapping, but it is followed by an agreeable glow. The respiratory symptoms are improved at once, expectoration promoted and suggestion shares in the general benefit that follows. A local reaction on the part of the lung tissues is evident in many cases, manifested by symptoms that suggest "a fresh cold," a foreign-body irritation from the increased throwing-off of the waste products. When this passes away, in a few days, it leaves the patient unmistakably improved in every respect. He observed that in 39 out 46 patients with hemoptysis the hemorrhages did not recur afterward, but in the 7 others the tendency to hemorrhage was not affected. In patients with hemoptysis, Friedlaender would avoid the vicinity of the lesion and, in fact, he regards the procedure as a general rather than a local measure.

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HOUSEHOLD MEDICINE.

LEE CENTER, ILL., March 7, 1901.

To the Editor:—Will you give me the name, publisher and price of a household medical book suitable to place in the hands of a young woman, and which is in harmony with modern medicine and medical ethics. C. M. C.

ANS.—We do not know of any work on household medicine altogether suitable for endorsement.

PRACTICE IN INDIANA.

CHICAGO, ILL., March 10, 1901.

To the Editor:—Will you kindly give the requirements for the practice of medicine and surgery in Indiana? A. T.

ANS.—Applicants for licenses to practice medicine in Indiana must be bona fide residents of the county and state; must possess the necessary application blank from the county clerk, which, properly filled, with diploma and fee of $10, must be sent to the State Board of Medical Registration, Room 120, State House, Indianapolis, Ind. If satisfactory, the board will issue its certificate, and on presentation of this to the county clerk a license will be granted. If not satisfactory, an examination must be passed, for which the fee is $25. For further information as to rulings of the board, etc., address Dr. W. T. Curryer, secretary of the State Board of Registration, Indianapolis, Ind. A law requiring examination in all cases is now pending in the legislature.

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ANS.—In Wisconsin all persons commencing the practice of medicine and surgery must submit to examination or present a diploma from a medical college that requires at least three courses of not less than six months each before graduation, no two of the said courses to be taken within any twelve months. The fee for examination is $10, but if a satisfactory diploma is presented the fee will not exceed $5. The license must be recorded in the county where the practice is intended. A certificate from another state with equal qualifications may be accepted if the Board of Registration chooses. The Board of Medical Examiners holds regular meetings on the second Tuesdays in July, at the Park Hotel, in Madison; in October, at the Athearn Hotel, in Oshkosh, and in January and April, at the Hotel Pfister, in Milwaukee. All applicants for licenses should apply to the secretary, Dr. H. M. Ludwig, Richland Center, Wis., or at the addresses given, prior to meetings.

DRAINAGE OF LACRIMAL CANAL.

BOSTON, MASS., March 12, 1901.

To the Editor:—Please let me know the name of the doctor who first advised draining the lacrimal canal by means of a silk thread knotted together to a loop, which should be drawn, with the knot, through the canal once or twice a day. I have recently read about it, intended to relate it in a foreign journal, but can not find the doctor's name and residence. R. H.

ANS.—The article referred to was written by Erasmus A. Pond, and published in the *Medical Record* of February 2. It was noticed in THE JOURNAL of February 9, p. 469.

THE INDIVIDUAL COMMUNION CUP.

FORT WAYNE, IND., March 12, 1901.

To the Editor:—I am desirous of obtaining the name and address of the original experimenter in the individual communion cup agitation. He read a paper before the Section on State Medicine, at Philadelphia, in 1897, but I am unable to find the article. Would you kindly give me this address, or tell me where I can get it? L. P. D.

ANS.—The paper is probably that of Dr. Howard S. Anders, published in THE JOURNAL of Oct. 16, 1897. In it he gives the history of the original agitation and does not credit himself with the first publication in regard to it, though his own paper appeared in the same year—1894—as that of Dr. C. H. Forbes, to whom he refers. The address of Dr. Anders is 1836 Wallace St., Philadelphia, Pa.

PHYSICIANS AND THE AUTOMOBILE.

CHATTANOOGA, TENN., March 11, 1901.

To the Editor:—I notice an inquiry in the issue of THE JOURNAL dated March 9, from Dr. H. S. J., Lead, S. D., relative to the best automobile to be used in the physician's practice, and in answer I wish to say that I have tried the three different kinds of motive power and find that the steam vehicle is by all means the nicest and most practicable for use under all circumstances, because it can be depended on at all times. It is freer from noise than the electric or gasoline-propelled machine, will climb any grade and never balks, can be repaired by any mechanic, is easily and quickly

150 persons. In contrast to this experience of the non-transmissibility of tuberculosis from the progenitors, Goldschmidt cites twenty-eight families of various nationalities in which both parents were free from the slightest trace of tuberculosis. In 21 of the families, all the children died of tuberculosis between 15 and 35 years of age; in 5 others most of the children died, and in 2 others two children in each were affected with a tubercular affection of the bones. He points out that in 21 of these families the fathers were syphilitic. There were only 8 abortions in the record of all the families. He suggests that the paternal syphilis might have induced a predisposition to tuberculosis. He also is inclined to believe that the parental tuberculosis in the Madeira colony conferred a sort of immunity on the children.

Jolles' Improved Ferrometer.—Comparison of the readings of the hemometer and of the ferrometer affords valuable information in many cases, not to be derived from either alone. The hemometer shows higher and lower amounts of hemoglobin in icterus, corresponding to the progress and subsidence of the affection. The more intense the icterus the greater the difference between the readings of the hemometer and of the ferrometer. In hemorrhagic diseases the hemometer indicates a high figure, while the blood-iron is diminished both comparatively and absolutely. Two periods in childhood seem to be distinguished by a special abundance of iron in the blood, the period of transition from nursing to a mixed diet and puberty. It is important in treating various affections to determine the amount of blood-iron as well as the hemoglobin and the number of red corpuscles. For these and other reasons Jolles considers his improved ferrometer a valuable contribution to scientific methods of investigation. He has simplified and adapted it to Fleischl's hemometer, so that the latter instrument with a slight addition, can be made to serve two purposes. The blood is evaporated, incinerated and treated with potassium sulphate as by the original method. One of the cylinders is placed in front of the glass wedge of the hemometer and the other over it. The wedge is then moved along until the fluid in both tubes is of the same color. The illumination must be from a candle or lamp, not an electric light. It should shine on the reflector only, and he recommends a covered box for the lamp, open at the back, with one small square aperture opposite the reflector. This improved ferrometer is so simple and so easily managed that he trusts it will be found of general clinical utility. He has already come to the conclusion that the amount of blood-iron in normal conditions averages higher than the figures he has previously announced—.0413 to .0559 in 100 c.c. of blood.

Therapeutische Mon. (Berlin), January and February.

Treatment of Peritonitis with Alcohol Compresses. Meyer.—The advantages of local application of alcohol have been proclaimed by Buchner and others from time to time. By the influence of the alcohol on the nerves of the affected region, strong hyperemia is induced and leucocytes charged with bactericidal enzymes are attracted to the spot and, by their proteolytic action, may destroy the elements of the cutis and lead to the perforation of the purulent collection. Meyer describes a severe case of tubercular peritonitis in which circumstances rendered surgical intervention impracticable. He applied compresses of alcohol, and in two weeks fluctuation was evident and a week later pus perforated through the umbilicus. The child recovered and has gained remarkably in weight.

Salol in Diabetes.. Teschemayer.—In accordance with Ebstein's advice, 1 gm. of salol was administered four times a day, to eight diabetics. In three severe cases no effect was perceptible, but in the others the sugar vanished completely from the urine during the treatment and for the several days afterward before the patients were lost to view. While the urine was under the influence of the salol, the plane of polarization was deflected to the left.

February.

Igazol in Treatment of Tuberculosis. Hoffner and Beerwald.—The communication of the first writer reports negative results in ten cases from the action of Cervello's method of treating pulmonary tuberculosis with iodoform-formaldehyde, but Beerwald, on the other hand, asserts, from an experience with twelve patients, that it is the best of all methods known to date for treating bronchitis with secretion, whether tubercular or not. Ten of his patients were very much improved by the treatment.

[According to Ehrenfeld, in the *Wien. Med. Woch.* (January 26 and February 2), thirty-four patients with pulmonary tuberculosis—all severe cases—were treated according to Cervello's method inhalations of iodoform-formaldehyde-igazol. Improvement was evident in 53 per cent., including 4 clinical recoveries, 8 marked improvements, and 6 patients somewhat benefited; 8 patients died.—Ed.]

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New Patents.

Patents of interest to physicians, etc., February 19 and 26:

668,164. Making ammonia derivatives of saccharin. Leon Cerf, Lyons, France.

668,488. Amalgam squeezing machine. James V. Coleman, San Francisco, Cal.

668,466. Nurses' Companion Case. Margaret A. Taylor, New London, Conn., and P. A. Murphy, Lynn, Mass.

34,116. Design: Water-bag. Christian W. Meinecke, Jersey City, N. J.

668,671. Obtaining sodium sulphate from brines. Harry Baker and E. Haworth, Runcorn, England.

669,020. Spray tube for nebulizers. William and J. Boekel, Philadelphia, Pa.

668,911. Surgical instrument. George Ermold, Elizabeth, N. J.

668,636. Douche bench. William T. Gregg, Yonkers, N. Y.

668,647. Ecraseur. Max Jaenicke, Gorlitz, Germany.

669,034. Surgical instrument. James S. Manly, Cripple Creek, Colo.

668,823. Folding tongue depresser. Charles J. Pilling, Philadelphia, Pa.

668,929. Device for treating diseases of the ear. Mike Polich, Riverside, Cal.

668,661. Electric bathing apparatus. Oscar Schneider, New York City.

668,762. Disinfecting apparatus. Thomas N. Thompson, Scranton, Pa.

Copies of above patents may be obtained for 10 cents each by addressing John A. Saul, Solicitor for Patents, Fendall Building, Washington, D. C.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Feb. 28 to March 6, 1901, inclusive:

George W. Adair, major and surgeon, U. S. A., leave of absence granted.

Charles H. Andrews, captain and asst.-surgeon, Vols., recently appointed, and now in San Francisco, Cal., to report for transportation to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

J. Newton Boyce, acting asst.-surgeon, from duty on the transport *McClellan*, to San Francisco, Cal., to accompany troops to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

Louis Brechemin, major and surgeon, U. S. A., from Fort Logan, Colo., to San Francisco, Cal., en route to Manila for duty in the Division of the Philippines.

George E. Bushnell, major and surgeon, U. S. A., on expiration of his present sick leave, is assigned to duty at Fort Logan, Colo.

Jerome S. Chaffee, lieutenant and asst.-surgeon, U. S. A., recently appointed, is assigned to duty at Columbus Barracks, Ohio.

Harold W. Cowper, captain and asst.-surgeon, Vols., recently appointed, and now at San Francisco, Cal., to report for transportation to Manila, P. I., and for subsequent assignment in the Division of the Philippines.

G. S. Driver, acting asst.-surgeon, leave of absence granted.

Matthew Leepere, captain and asst.-surgeon, Vols., recently appointed, and now at Fort Crook, Neb., to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Benjamin F. Pope, lieutenant-colonel, deputy surgeon-general, U. S. A., from duty at the Presidio of San Francisco, Cal., to proceed on or about May 1, 1901, to Manila, P. I., for assignment as chief surgeon of the Division of the Philippines.

Paul F. Straub, major and surgeon, Vols., now at San Francisco, Cal., is relieved from further duty in the Division of the Philippines and assigned to duty at Fort Crook, Neb.

Henry D. Thomason, major and surgeon, Vols., recently appointed, to proceed from Albion, Mich., to San Francisco, Cal., reporting to the commanding general, Department of California, for temporary duty, at the completion of which he will proceed to Manila, P. I., for duty in the Division of the Philippines.

Charles F. Williams, acting asst.-surgeon, from Yorkville, S. C., to temporary duty at Fort Screven, Ga.

Robert H. Zauner, major and surgeon, Vols., from temporary duty at Columbus Barracks, Ohio, to rejoin his station, Fort Du Pont, Del.

Navy Changes.

Changes in the Medical Corps of the Navy for week ending March 9, 1901:

Asst.-Surgeon O. M. Eakins, detached from the *Ajax*, when put out of commission, and ordered home to wait orders.

Surgeon F. J. B. Corderio, detached from the *New Orleans* and ordered to the *Buffalo*.

P. A. Surgeon R. Spear, detached from the *Buffalo* and ordered to the *Isla de Luzon*.

P. A. Surgeon R. M. Kennedy, detached from the *Newark* and ordered to the *Bennington*.

Asst.-Surgeon J. J. Snyder, detached from the *Isla de Cuba* and ordered to duty with a detachment of marines at Pollock, P. I.

Asst.-Surgeon M. V. Stone, detached from the *Isla de Luzon* and ordered to the *Buffalo*.

Asst.-Surgeon J. H. Payne, Jr., detached from duty at Pollock, P. I., and ordered to the *Isla de Cuba*.

Asst.-Surgeon E. O. Huntington, detached from the *Bennington* and ordered to the *Newark*.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the twenty-one days ended March 7, 1901:

Surgeon George Purviance granted leave of absence for one day.

Surgeon C. T. Peckham, granted leave of absence for twenty days on account of sickness.

P. A. Surgeon J. A. Nydegger, upon expiration of present leave of absence, to report at Washington, D. C., for orders.

P. A. Surgeon J. A. Nydegger to proceed to Cape Charles Quarantine as inspector.

P. A. Surgeon H. W. Wickes, granted leave of absence for thirty days from March 11.

Asst.-Surgeon F. E. Trotter, upon being relieved by Asst.-Surgeon T. D. Berry, to proceed to Havana, Cuba, and report to the chief quarantine officer for duty.

Asst.-Surgeon T. D. Berry, relieved from duty at Havana, Cuba, and directed to proceed to Cienfuegos, Cuba, relieving Asst.-Surgeon F. E. Trotter.

Acting Asst.-Surgeon B. Y. Harris, granted leave of absence for ten days.

Acting Asst.-Surgeon W. H. Marsh, granted leave of absence for four days from February 27.

P. A. Surgeon T. B. Perry, granted leave of absence for thirty days from March 12.

P. A. Surgeon B. W. Brown, directed to report at Washington, D. C., for special temporary duty.

P. A. Surgeon J. A. Nydegger, to assume temporary command of the Cape Charles Quarantine station during the absence of Asst.-Surgeon C. W. Wille.

Asst.-Surgeon Taliaferro Clark, granted seven days' extension of sick leave, from March 8.

Asst.-Surgeon F. E. Trotter, relieved from duty as quarantine officer at the port of Cienfuegos, Cuba.

Asst.-Surgeon C. W. Wille, granted leave of absence for seven days from March 4.

Asst.-Surgeon T. D. Berry, detailed as quarantine officer at the port of Cienfuegos, Cuba.

[illegible]ong, relieved from duty in the Hygienic [illegible], D. C., and directed to proceed to New York City and report to Surgeon L. L. Williams, Immigration Depot, for duty.

Hospital Steward W. F. Macdowell, granted leave of absence for thirty days from March 20.

Hospital Steward F. S. Goodman, relieved from duty at Havana, Cuba, and directed to proceed to Washington, D. C., and await orders.

Hospital Steward Walter Newbern, granted leave of absence for thirty days from March 5.

Health Reports.

The following cases of smallpox and yellow fever were reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended March 9, 1901:

SMALLPOX—UNITED STATES.

Alabama: Mobile, Feb. 23-March 2, 1 death.

California: San Francisco, Feb. 18, 8 cases.

District of Columbia: Washington, Feb. 23-March 2, 7 cases.

Florida: Jacksonville, Feb. 23-March 2, 3 cases.

Illinois: Cairo, Feb. 16-23, 6 cases.

Iowa: Ottumwa, Feb. 2-9, 1 case.

Kansas: Lawrence, Feb. 23-March 2, 2 cases; Wichita, Feb. 23-March 2, 12 cases.

Kentucky: Lexington, Feb. 23-March 2, 2 cases.

Louisiana: New Orleans, Feb. 23-March 2, 7 cases, 2 deaths.

Michigan: West Bay City, Feb. 22-March 2, 5 cases.

Minnesota: Winona, Feb. 23-March 2, 12 cases.

Nebraska: Omaha, Feb. 22-March 1, 5 cases.

New Hampshire: Manchester, Feb. 23-March 2, 27 cases.

New York: Elmira, Feb. 23-March 2, 1 case; New York City, Feb. 23-March 2, 64 cases, 11 deaths; Yonkers, Feb. 22-March 1, 1 case.

North Carolina: Charlotte, Feb. 1-28, 16 cases.

Ohio: Ashtabula, Feb. 23-March 2, 2 cases; Cincinnati, Feb. 22-March 1, 2 cases; Toledo, Feb. 23-March 2, 8 cases; Youngstown, Feb. 23-March 2, 2 cases.

Pennsylvania: Allegheny, Feb. 23-March 2, 2 deaths; Philadelphia, Feb. 23-March 2, 1 case; Pittsburg, Feb. 23-March 2, 4 cases.

Tennessee: Memphis, Feb. 23-March 2, 16 cases; Nashville, Feb. 23-March 2, 17 cases.

Utah: Salt Lake City, Feb. 23-March 2, 31 cases.

West Virginia: Huntington, Feb. 23-March 3, 1 case.

SMALLPOX—FOREIGN.

China: Hongkong, Jan. 15-22, 1 case.

England: Liverpool, Feb. 8-16, 2 cases; London, Feb. 8-16, 1 case.

Scotland: Dundee, Feb. 8-16, 6 cases; Glasgow, Feb. 15-22, 20 deaths.

Mexico: Vera Cruz, Feb. 19, 300 cases; Yucatan, Feb. 20, epidemic.

Russia: St. Petersburg, Feb. 2-9, 4 cases, 1 death; Warsaw, Jan. 26-Feb. 2, 8 deaths.

Turkey in Asia: Jaffa, Jan. 1-15, epidemic.

YELLOW FEVER.

Cuba: Havana, Feb. 17-24, 3 deaths.

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Address.

RECENT ADVANCES IN DERMATOLOGY WHICH ARE OF SERVICE TO THE GENERAL PRACTITIONER.*

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NEW YORK CITY.

Four years ago,[1] when I last had the honor of presiding over this Section, my address was entitled "Notes on Some of the Newer Remedies Used in Diseases of the Skin." At that time I called attention to the very large number of new remedies which were continually presented to the profession, remarking that it was well "now and again to stop and weigh and try to estimate the value or worthlessness of the new and to see what of it should be added to our stock of old, and thus to recognize where true advance had been made." It is in this spirit that I again take up the matter, and I wish to present some of the more recent advances in dermatology, which are of service to the general practitioner.

In my former address I called attention to the fact, however, that it was not so much new remedies which are needed as it was better acquaintance with the diseases to be treated, and a more perfect knowledge of the means we already had; and also that in connection with newer remedies it is most desirable that very definite statements should be made, by reliable observers, of the exact conditions of use, and also the adverse results, as well as those which are favorable. I also remarked that as a rule general practitioners, I believe, were far more apt to try the newer remedies proposed than were those engaged in special practice. The specialist naturally weighs the true value of this or that new suggestion, and being fairly well satisfied with his present equipment, is less prone to rush into the new, except on very good evidence of its worth; and it may be added, much that is brought forward is often found to rest on very slender experience.

It would be quite beyond the possibilities of this address to attempt to cover the whole ground of recent advances in dermatology, and attention will be called only to such items as are likely to be of service to the general practitioner. We may, for the convenience of study, consider one subject under the three divisions of diagnosis, prognosis and treatment.

DIAGNOSIS.

Dermatitis.—Considerable progress has been made of late years in the way of recognizing various inflammatory conditions of the skin, under the general name dermatitis, and much that was formerly classed as eczema is now thus designated. All are now quite familiar with the dermatitis herpetiformis of Duhring, characterized by a variety of lesions, erythematous, papular, vesicular and bullous, which often very closely resemble eczema. The characteristic feature, however, is a grouping of the lesions and a recurrence of the attacks without any recognized cause. A recognition of the true nature of this often intractable disorder will often prevent much disappointment in the way of prognosis.

Dermatitis Medicamentosa.—Recent years have added very largely to the list of medicinal rashes or forms of dermatitis medicamentosa, and the number of drugs which have been observed to cause an eruption, in rare cases, is now very large. Time and space forbid dwelling on the features of the different appearances presented, but it may be interesting simply to mention the drugs which have been observed to produce skin lesions. These are aconite, antipyrin, arsenic, belladonna, boric acid, bromin, cannabis indica, carbolic acid, chloral, condurango, copaiba, cubebs, digitalis, iodin, jaborandi, mercury, opium, phosphorus, podophyllin, quinin, salicylic acid, santonin, sodium benzoate, strychnia, tar, turpentine, and perhaps some others. It is to be noted that the production of such effects is due to some idiosyncrasy on the part of the patient, for their occurrence is rare. It is well, however, for the general practitioner to bear the possibility in mind when eruptions of the erythematous type occur suddenly which do not quite correspond with well recognized affections.

Another form of dermatitis which recent advances have added is that due to the injury sometimes inflicted by the *x*-rays. This need not detain us here except to give the caution against a hasty favorable prognosis, for in many instances on record it has proved most rebellious, and in some cases has been attended with serious consequences.

Blastomycetic Dermatitis.—Still another addition has been made to the lesions classed under the same general name in the dermatitis blastomycetica, or yeast mycosis. This curious and rather rare affection resembles most the verrucose types of tuberculosis of the skin, but it is desirable to correctly diagnose it from these forms of lupus, as thorough and radical treatment offers very satisfactory prospects of cure.

La Grippe Rashes.—Very interesting additions to the list of acute erythematous skin lesions are those which have of late years been described in connection with la grippe; and often these will prove very puzzling to those not very well acquainted with diseases of the skin. In some instances the eruption is hardly distinguishable from measles, and in others it will be so confluent that scarlatina is closely simulated; sometimes it is impossible to determine the true nature of the eruption at once, and it is only by the concomitant symptoms that a probable diagnosis can be made. These la grippe eruptions are generally very short-lived, although sometimes they may persist and even recur, and from the catarrhal symptoms often present are not infrequently reckoned as second or repeated attacks of measles.

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* Delivered before the Section on Cutaneous Medicine and Surgery at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

[1] Jour. A. M. A., Nov. 28, 1896.

Erythromelalgia, which was described by Weir Mitchell in 1872, has attracted some attention of late years, and is shown to be sufficiently frequent to merit attention. It is characterized by a flushing of the skin, mainly of the extremities and ears, with at times considerable burning pain. Often a single toe may be affected in such a manner that walking is difficult or impossible. It is particularly interesting, as the condition may be strongly suggestive of gout, or even of erysipelas. The attacks may be of brief duration, or the redness may persist for a considerable time, with no appreciable alteration of tissue. It is due to a nerve disturbance, either paralysis of the vasoconstrictors or an excitation of the vasodilators, and may be regarded as exactly the opposite condition to that which obtains in Raynaud's disease.

The pre-mycotic stage of mycosis is an interesting phase of skin lesion, happily very rare, which has been clearly established of late years. Long before the tumors appear, which were formerly supposed to constitute the affection, there may be a period of erythematous eruption in patches and circles which ultimately lead up to the fully developed malady. These erythematous lesions may often resemble erythema multiforme or erythematous eczema and may be very puzzling. There is generally not very much itching or subjective symptoms, and only the brownish-red circles or patches of varying size, generally first on the body and limbs, which either may slowly subside or remain and develop into the slightly protuberant, and later ulcerating, granulomatous masses which lead up to the distressing and sooner or later fatal disease.

Tuberculosis cutis has also obtained a full recognition of late years, and though comparatively rare, it may at times be of considerable interest to the general physician. While lupus vulgaris is also recognized as due to, or at least associated with, the presence of tubercle bacilli, the name, "tuberculosis cutis," is most commonly given to the warty masses seen from time to time, principally about the hands and face. While lupus probably comes from the infection of the bacilli through the medium of the lymphatics and blood-vessels, the tuberculous cutis verrucosus has to do with primary local infection, and the disease tends to remain more or less local, or increases very gradually. When removed effectively the disease generally remains absent, a healthy cicatrix taking its place. It is most commonly seen in butchers, and also in anatomists, and in those having much to do with tuberculous patients, as in laundresses who have cared for their clothes.

Ringworm.—The advances in the study and knowledge of ringworm, while not yet resulting in any very startling improvement in therapeutics, should still be of interest to practitioners. It has been found that what has hitherto passed as a single disease probably represents a number of distinct affections due to parasites which may be quite different in their microscopic appearance, behavior under cultivation, and also in their clinical effects on the skin. A large share of the eruption on the heads of children is due to the small-spored fungus, which rarely attacks adults; while the forms of ringworm found on the other portions of the body are due to one or two different varieties of trichophyton, which also readily affect adults. It is claimed that the varieties causing suppuration, as seen mainly on the bearded face, are derived from animals. It is interesting to determine, microscopically, whether the scalp disease is caused by the microsporon or the megalosporon, as the former is much more obstinate to treatment and a more unfavorable prognosis as to duration is necessary.

PATHOLOGY.

In the pathology of skin diseases there has still been considerable activity of research, and clearer views are obtained each year in regard to many affections.

Eczema has been the object of much consideration, and there have been several notable studies and discussions in regard to its true nature, while the old question as to its local or constitutional origin has been repeatedly considered. One writer (Larrede) has been very strenuous for a parasite origin of much that is called eczema, while another careful thinker (Leslie Roberts) argues strongly and rightly, as we believe, in the direction of the very great importance of the resistive power of the skin in the direction of nervous control.

Seborrheic Eczema.—Very great advance has been made in the full recognition of seborrheic eczema, with which the name of Dr. Unna will always be associated. While it is not definitely proven that it is due to a micro-organism, this is about accepted by most dermatologists, and the almost specific control of it by resorcin and sulphur is one of the most satisfactory advances in dermatology, which every practitioner may share.

Alopecia Areata.—Interesting and elaborate studies have been made by Sabouraud and others in regard to the pathology of alopecia areata and much evidence has been brought forward, both in writing and discussions in regard to its parasitic and its nervous origin, and the true nature of all cases of this interesting disease is not yet established. The opinion is prevailing more and more, however, that both views are correct, and that there are probably two affections, closely resembling each other, one caused by a micro-organism and the other of nervous origin. This is not at all surprising when we consider how closely many other skin lesions of quite different characters resemble each other, as lupus and tubercular syphilis, psoriasis and ringworm, etc.

Role of Pus Organisms.—Many studies have been made of late years in regard to the rôle of pus organisms in the production of skin diseases, and many have been very strenuous in regard to their pathologic influence. Elliot[2] has made a careful review of the literature, and his conclusions must be somewhat disappointing to the ardent supporters of micro-organisms as a sole cause of disease—for he finds that while the pyogenic organisms, the staphylococci and streptococci are in general the cause of suppuration, they are not the only cause. In a large proportion of cutaneous diseases, primarily or secondarily suppurative, no constant pyogenic serum organisms have been found and inoculation experiments have usually been negative or have failed. This coincides with what had been expected by those who take the broadest view of dermatologic medicine, and who realize that vitality and innervation play an important part in the production and cure of skin affections as well as those of other organs.

Dr. White, Jr., of Boston, has made some very interesting studies in regard to the rôle of staphylococcus in skin diseases, and while he demonstrates that the pus cocci were found in a variety of pustular lesions, he acknowledges that the form and variety of the lesions depend upon other elements. No one can rightly deny the power of micro-organisms to produce disease, for the results of aseptic surgery are incontrovertible, but there is great danger in connection with diseases of the skin lest local pathology lead to a neglect of the more important consideration of the soil on which the germs flourish; a striking illustration of the bearing of this remark is found in the change of opinion which has come over the medical world in regard to the relative importance of attention to the microbe in tuberculosis, as compared with the more important elements of the nutrition and hygienic condition of the patient. Pus organisms, as also an infinite variety of bacteria, are almost omnipresent, and when opportunity offers, pathogenic organisms do germinate and their toxin causes disease. But, on the other hand, the very omnipresence of these germs and the relative infrequency of their action certainly shows us that the truly wise physician should look to more than the local cause and seek to discover and remedy the underlying cause in each case. This points once more to the wisdom of the precept that it is often the patient who is to be treated rather than the disease by a specific name.

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[2] Elliot: Jour. of Cutan. and Genito-Urin. Dis., February, 1900.

THERAPEUTICS.

Very much has been reported of late years in the line of therapeutics of diseases of the skin, and if one should adopt the various suggestions appearing in literature there would be a never-ceasing change of methods, which certainly would not be of service in the practical management of cases. It sometimes requires not a little determination to resist the apparently plausible assertions of writers in regard to the value of this or that new remedy or procedure. It must ever be remembered that cases of the same disease often differ very greatly in their behavior under treatment, and also that remedies or measures often succeed much better in the hands of the one who proposes and uses them than they may do when employed by another. Every workman knows his own tools, and better work can often be done by a skilled workman with poor tools than by a poorer artificer equipped in the best manner. From a very considerable experience with new remedies and old, I would therefore utter a word of caution against the too ready acceptance of "therapeutic hints" which are so overabundant in this day of intense restlessness in every field of human activity.

Newer Remedies.—In looking over my address of four years ago I find a number of the newer remedies there mentioned which have well stood the test of time since that date, and some which are there mentioned more or less favorably which I do not now advocate. I will not consume time in going over all these again, but may make a few remarks about some which seem appropriate.

Resorcin and ichthyol have more than held their own, and all that was said of them still holds good, and more could be added if desirable. I do not know whether much can be said in favor of thiol and tumenol, then mentioned; I seldom employ them or hear of their use, as I have never felt satisfied that they were better than ichthyol—if this can be obtained pure, which is often difficult. Alumnol, betanaphthol, aristol and europhen hold their own, and menthol is often of great value in controlling itching. Peroxid of hydrogen is used with increasing confidence in connection with many ulcerative conditions of the skin, and is also of value in chloasma, and to bleach superfluous hair on the face or elsewhere, and appears to have a measure of effect in destroying the life of the latter. Camphor-chloral and camphophenique are still regarded as valuable antipruritics, and lanolin, vaselin, cosmolin, albolene, etc., are in constant use. The various dusting powders made from stearates, as also the dolomol preparations have their uses under certain conditions and are still regarded as valuable. The effort to produce adherent dressings to the skin, alluded to in my former address, has not been as successful as was hoped, and the results from plasters, gelatin dressings, etc., are not always as satisfactory as could be desired, although some of the prepared and medicated plasters serve an excellent purpose in certain chronic and hard conditions of the skin. Finally, medicated soaps, which were there alluded to, are slowly assuming their proper place in dermatology, which will never be a very large one; under suitable conditions they are of service, but in inexperienced hands there is more danger from their injudicious use than is commonly appreciated.

Phototherapy and X-Rays.—Among the newer therapeutic agents from which much has been expected perhaps the first which should be mentioned is that of light, as found in the *x*-rays and the so-called Finsen phototherapy. It is perhaps too soon to form a correct opinion of the real value of this means of treatment, and some of the earlier reports have been so extravagantly favorable that very strong hopes were raised that in this we had at last a successful means of combating that rebellious disease, lupus. But when we recall the enthusiastic reports attending the earlier use of Koch's tuberculin in lupus, and consider that now that method of treatment is practically discarded, there is reason to fear that the hopes now held out by this new method may also prove illusory.

It is hardly necessary here to describe the apparatus or the exact method of treatment, suffice it to say that it consists in means whereby the direct rays of the sun somewhat concentrated and deprived of its red or heat rays are made to impinge upon the affected area. Both the direct rays of the sun and those obtained from an electric arc-light have been used, and many reports have been given in which the disease has gradually shrunken away and disappeared. Whether the claimed cures will be permanent time alone will show, and as far as I can learn, there are not many dermatologists who are enthusiastic over the procedure. In the cases treated the patient has been subjected to the altered rays of light for several hours at a time, and daily sittings are generally required, while the treatment lasts over some weeks. The treatment has been especially developed by Finsen, of Copenhagen, and Dr. Hopkins, of Brooklyn, has installed an apparatus for this phototherapy, but I have not yet learned of any results obtained there.

Therapy of Lupus.—The *x*-rays have also been used for lupus, and a number of writers have reported cases of apparent cure, but it is yet too soon to be certain as to ultimate results.

In connection with this treatment of lupus should be mentioned the excellent results which have been reported by Lang, of Vienna, and many others, from the complete excision of the disease under perfect aseptic conditions, with subsequent treatment by plastic surgery or skin-grafting. The reported results are so satisfactory that there should be no hesitancy in accepting this as the quickest, and in many respects the most satisfactory, method of dealing with certain cases of this most rebellious disease.

Treatment of Lupus Erythematosus.—The treatment of lupus erythematosus has also received considerable attention of late years, but unfortunately no very great advances have been made; although phototherapy has been reported to have yielded good results in this disease. Whitehouse has recently reported the cure of lupus erythematosus with the internal use of iodoform, one grain three times daily, and I have seen great apparent benefit from its use in this disease. The number and variety of local measures which have been recommended during the past few years show that we are yet far from having a certain remedy for the disease; all of them have the object of altering the vital relations of the tissues. One which is well worth trying, and which I have seen of service, is the local use of arsenic, either in the form of diluted Fowler's solution, or a solution of arsenious acid, beginning with two grains to the ounce in water and increasing the strength, so as to produce some moderate cutaneous excitation. After its use a mild, soothing lotion, such as that of calamin and zinc, is applied.

The current literature of the past few years is very full of suggestions of various kinds in regard to the treatment of very many of the common diseases of the skin, but unfortunately there are but few of them which are of such special and certain value as to warrant much detail here. We may mention a few of the most valuable.

Arsenic in Eczema.—Some writers have again brought up the almost specific control which arsenic will have over eczema in small children, when given freely and for a prolonged time, as the present writer showed some time ago; it seems to have less effect on the disease after the age of 5 years. The present writer would call especial attention to the value of milk in connection with the treatment of eczema if used in exactly the right manner, as detailed before the Association two years ago. In cases of neurotic eczema the results will often be very striking, if the method is accurately followed. This consists in taking a tumblerful of milk, *slightly warmed, one hour before each meal,* followed, if possible, by a rest of half an hour in a darkened room. The milk should be taken pure and alone, no atom of other food being taken with or soon after it, and care being exercised that the stomach is entirely free from food or medicines previously taken. When used in this way the milk acts as a powerful nerve tonic, and neurotic eczema will often yield much more rapidly and satisfactorily than without it.

Local Therapy in Eczema.—Very much has been written of late years in regard to the local treatment of eczema, and to even briefly enumerate the various remedies and measures which have been proposed would more than consume the time alloted to this address. Undoubtedly for the different stages and phases of this protean eruption very varied treatment may at times be required, but it seems suitable to utter a word of caution against the too ready acceptance of much that is prescribed.

Lassar's paste (zinc oxid, ʒii; pulv. amyli, ʒii; vaselin, ℥1; m.), to which may be added camphor, salicylic acid or resorcin, 2 to 4 per cent., or even more, is certainly a very valuable addition to our means of combatting subacute eczema.

The various gelatin-glycerin preparations, applied so to form a firm, adherent coating on the part, are still extolled by many, but the present writer has not of late made great use of them. The following is one of the latest formulæ, which should be of service in certain conditions:

℞. Gum tragacanth ....ʒiiss
Gelatin optim. ....ʒii
Glycerin ....ʒvi
Thymol ....gr. ¼
Aquaæ destil. q. s.

Soak the tragacanth and the gelatin each in ten ounces of water over a steam bath for twenty-four hours, strain through muslin and make the final quantity up to twelve ounces with water.

Ichthyol, resorcin, salicylic acid and nearly every remedy used in dermatologic practice can be incorporated with this. It is applied like an ointment, or spread on *with a brush lightly,* and on drying gives a plastic, protective film.

Picric acid has been much praised of late, used in a saturated solution, pure or somewhat diluted, painted over acute and subacute eczema. It causes great smarting at first, which ceases, however, in ten or fifteen minutes, giving place to a sense of relief.

Permanganate of potassium, in a 2 or 3 per cent. watery solution, painted over the parts and allowed to dry on, is also a valuable antipruritic, as pointed out by the present writer some years ago.

Treatment of Syphilis.—This has been the subject of much consideration of late years, and really very diverse views may be found given by reliable observers, but mercury is still the acknowledged remedy, with iodin as an adjuvant. The question is repeatedly discussed as to the date of beginning mercurial treatment, and the duration and regularity of medication, and while some argue for only symptomatic treatment, on the recurrence of specific lesions, the weight of judgment seems still to be in favor of early measures as soon as the diagnosis is definitely established, and prolonged treatment, even to three to five years, with occasional breaks.

The hypodermic injection of various preparations of mercury has had very strong advocates during the past few years, and thousands of injections in hundreds of patients are reported with favorable results, and this both in the early and late stages of the disease. Its advantages are that: 1, it is an active remedy which can be regulated perfectly; 2, it avoids disturbing the digestive tract; 3, it avoids publicity in using remedies; 4, it is sometimes surprisingly curative when other measures have seemed ineffective. Its disadvantages are mainly the pain and occasional inflammation and abscess. Each of the different preparations of mercury for hypodermic medication has its advocates, and the bichlorid, calomel, "grey oil," and salicylate of mercury are about equally supported by testimony.

A somewhat new method of applying mercury through the skin has been introduced by Welander, and is worth mentioning. Acting on the idea that a certain amount of the good effect in mercurial inunction arises from the inhalation of vaporized mercury, he has devised a method by which it is worn next the skin on the chest. This is in the form of a bag fifteen by twenty inches in size, which is worn like a chest protector. On the inner side about a dram of mercurial ointment is applied every day. A fresh bag is used every week or so, and the patient may bathe daily. It is said that absorption of mercury takes place very quickly in this way, with great benefit to syphilitic lesions, which might indeed be expected, as it corresponds closely to the method of treating infantile syphilis with mercury on the inner surface of the abdominal band.

A new preparation of iodin, iodalbacid, has been introduced which, given in doses of from 3 to 5 grains daily in capsules, is said to have been very effective in cases of syphilis where iodid of potassium was badly borne.

It would be interesting to continue a consideration of the therapeutic advances in dermatology which are of value to the general physician, but already the proper limits of this address have been overstepped and I must stop. But the subject is not all exhausted and there are many items which properly should be mentioned; and my only hope is that something which has been said may be the means of exciting a more lively interest in the subject of diseases of the skin, and may lead some one to more seriously seek to know and recognize this class of affections and their proper and best therapeutic measures. Dermatology is an inviting, though difficult, field, and there is certainly no short cut to its thorough mastery, but although all can not hope to compass it entirely, a reasonable amount of study and observation, with judgment, will enable the general practitioner to utilize many of the advances which are continually being made in this branch.

In conclusion allow me to say a few words in regard to the Section on Cutaneous Medicine and Surgery, which is a part of this great national organization of medical men. Since the beginning of this Section the effort has been, on the part of the officers, as far at least as I have had anything to do with it, to make it such as would be of value to the general practitioner and to enlist his co-operation, both in the matter of the preparation of papers and attendance. This is not a gathering of specialists in dermatology; indeed, relatively few of the dermatologists of the country have ever attended any of its meetings. The American Dermatological Association is for such, as are also certain local societies. It is true that all the papers presented have not always been such as would greatly interest the general practitioner, nor is this the case in any other of the Sections. And yet, during all these years the skin section has been very poorly attended, and it has been hard to interest the profession in it. I speak of these things both for those now present and for those who may perchance read this later. Those of us who are well versed in the subject should, I think, not introduce too much of the rare and difficult, but rather topics which may be of general interest, and the same in the discussions. I would also have general practitioners present such matters as are of interest or difficult to them that they may be here discussed, and I would also have general practitioners take part in the discussions, even though they may not be able to vie with the specialist in accuracy or freedom of expression. I repeat it, that this Section should be the field where the profession can bring the difficult and knotty problems in dermatology and receive the aid of those perhaps more familiar with the branch.

DISCUSSION.

Dr. H. C. Yarrow, Washington, D. C.—I was particularly impressed with the remarks concerning the use of medicines by hypodermic injection instead of by *the mouth*. I have been using, for the last four or five years, in cases of constitutional syphilis, hypodermic injections, and have found sozo-iodol of mercury to answer best. I have used other preparations, but none which gave so little pain. If the part is rendered anesthetic, and care is taken to drive the needle deeply into the tissue, the insertion may be accomplished without pain. Out of hundreds of cases in which I have used this treatment, to the exclusion of materials by the mouth, I have never had a bad symptom or abscess and very few cases in which I have failed to cure the patient. I am very glad to hear this matter mentioned, because if the members of the profession at large knew what great value there is in the hypodermic injection of mercury, according to my experience, they would largely abandon the use of remedies by the mouth. The proper mode is to commence with ¼ gr. and run the amount up according to the idiosyncrasy of the patient. I have given as much as 1.5 gr. at a dose without trouble.

A Member—How often?

Dr. Yarrow—At the commencement of treatment in the way I have mentioned, it may be given twice or three times a week for several weeks. After perhaps four or five weeks, if the patient is doing well, it may be given only twice, until finally you give one hypodermic injection weekly, then one in two weeks, and so on. I never cease this treatment under two years. Certainly, in my hands, the results have been more gratifying than anything I have ever used.

Dr. M. B. Hartzell, Philadelphia—I wish to refer to the use of quinin in large doses in the treatment of lupus erythematosus. I do not recall who proposed it, but I have used it in a number of cases with good results. I have not cured any patient with it, but I have seen such marked improvement follow promptly on its use that I can not but believe it exercises a beneficial influence on the disease. I do not know any remedy given internally which produces such a beneficial and prompt effect. I have given 25 to 30 grains a day. There has been marked improvement up to a certain point, but later the improvement ceases. One patient told me that while she was taking the quinin, the eruption was held in check, but as soon as she stopped it, it spread.

Dr. S. Sherwell, Brooklyn, N. Y.—There is one point familiar to those reading dermatologic literature, and that is the result of Finsen's method of applying sun-rays, particularly in lupus vulgaris. One who studied the method under Finsen, was a member of his clinic and received unusual privileges, did not report favorably on it, but did on a mode of treating lupus by saturating pointed sticks in the acid nitrate of mercury and carbolic acid and then introducing them, thrusting them into the lupus patches and making a person look a little bit like a hedgehog. They are cut off at or about the surface of the skin, and then a plaster put on to hold them in position. I reach the same favorable results in my experience by curetting the lesions, and then applying still more lightly the nitrate of mercury and carbolic acid. I do not look upon lupus as an incurable disease.

Dr. W. R. Inge Dalton, New York City—I desire to add my testimony to what the Chairman has said in reference to the treatment of eczema. I took note of his suggestion four years ago, and he mentioned at that time beta-naphthol, also jaborandi in combination with calomel. I combined all three, but used pilocarpin, the active principle of jaborandi, instead of jaborandi, and found it to be of vast benefit. Two years ago I heard Dr. Bulkley allude to this milk theory of his—one glass before each meal, and, I believe he stated at that time, a glass at bedtime. That mode of diet is simplicity itself, and very commendable, and when the patient follows the directions faithfully, as I have tried it in many cases, the result is very satisfactory.

Dr. William L. Baum, Chicago—In the treatment of erythematosus I use applications of arsenic solutions, one-half of 1 per cent. solution of sodium arsenate. With this method, three cases which I have treated in the last five years not only have shown marked improvement, but in two the disease has not shown in the last year and a half. Regarding hypodermic injections in syphilis, I doubt whether anybody has used it more consistently and in a larger number of cases than I have in the last ten years. This treatment is certainly of great value in certain conditions where it is necessary to produce a profound result in a short time. I quite agree that the injections should be intermuscular. As to the necessity for rendering the point of injection anesthetic, with injection of bichlorid, it is not painful; the trouble comes after the patient has had his injection a short time. And there is no necessity for the appearance of abscesses after this injection. It is probably the most satisfactory and most successful in most patients.

Dr. M. T. Corlett, Cleveland, Ohio—I wish to corroborate what was said relative to lupus erythematosus. Last year, in the treatment of this obstinate disease, I followed out the treatment of large doses of quinin. The disease respo readily to this drug, but to be successful it must be given in large doses. So I have found 30 grains a day necessary to produce marked effects. I have found also that it produces its effects only up to a certain point; I have yet to see a patient entirely cured. I have also found the local application of alcohol, which I have used for the last year or two, gives good results. With these applications I have accomplished better results than before in the treatment of lupus erythematosus. With regard to the treatment of syphilis by hypodermic injection of mercury, I agree with Dr. Baum, using it deeply injected, and I do not think it is applicable to all cases. I do not use it as a routine. The old methods by the mouth or inunctions—which in private practice is objected to by many—are better measures. But there are some cases which require quick treatment, and muscular injection is the best because in a few days one can get a decided effect. In many cases inunctions are not objectionable, and where the patient can be induced to follow out that treatment, it is also of value.

Original Articles.

HYPERACIDITY A CAUSE OF SKIN DISEASES.*

W. R. INGE DALTON, M.D.

NEW YORK CITY.

A year ago I wrote: "I have demonstrated to my own satisfaction that some skin affections are due to a nutritive disturbance, a defective degenerative metabolism, owing to which there ensues deficient utilization of nutritive substances conveyed to the tissues; producing a lethargic condition of the skin, an inefficient stimulation of the nerve twigs supplying the sudoriferous glands; that bacterial agencies cause septic and putrefactive changes in the alimentary canal and that inanimate toxins maintain selective affinities for the tissues, exerting their action upon the primordial protoplastic groups of cells. I am inclined more and more to think that the bond which connects the diatheses of the dermatoses with gout, rheumatism, arthritis, diabetes, and asthma, is generated by indiscretion of diet—and hic est mucro thesis meæ": *that the chyme passing in a hyperacid condition from the stomach, through the pylorus, into the second stomach, entails such increased labor upon the duodenum that its contents can not be rendered sufficiently alkaline for physiologic metabolism.*

Here is the starting-point—this acid dyscrasia, as I believe, the inevitable *fons et origo* of the pathologic lesions, which lead certainly to nearly all diseases of the skin, save the contagious exanthemata. The nidus is here furnished for the elaboration of the pabulum upon which the micro-organisms feed and propagate, thereby favoring organic fermentative changes throughout the ileum and large intestine, culminating in stasis of cellular action, cutaneous obstruction, and peripheral atrophy; visceral, cerebral, pulmonary, or cardiac lesions. The hyperacidity also inhibits the functional action of the glands of Lieberkühn and Brunner. The duodenum is the paramount reflex center for the entire intestinal tract; the pancreatic and biliary fluids pour into it; the par vagum connects it closely with the central nervous system; the solar plexus associates it with the sympathetic; the splanchnic, with the filaments of the spinal cord, as well as the thoracic center, and with the plexuses of Auerbach and Meissner—the one of the muscular coat, the other with the mucosa. It is here that iron is absorbed and taken up by the transport cells, combined with albuminous bodies, to be carried into the circulation, and it is the receptacle for an immense amount of blood. These physiologic and anatomic endowments all demonstrate the supreme importance of keeping a watchful supervision, so that the functional action of the duodenum may not be impaired. It is rather coincidental that whenever there are extensive excoriations or lacerations, or burns, involving a large amount of space, there follows ulceration of this organ.

It is contended that the infection caused by bacilli goes from the tonsillar crypts directly into the circulation, but I hold to my theory as being more tenable—it is that the chyle is emulsified while undergoing pancreatic digestion in the alimentary tract, and these minutely-divided products transport the pathogenic germs immediately through the lacteals, without causing infection locally into the vena cava; the lymph of the lymphatic system, with the micro-organism enveloped in the chyle, goes directly through the thoracic duct into the left innominate vein, and from the innominate into the venous circulation, through the right heart to the lungs, setting up infection there, by retarding oxidation, or they pass on with the blood, to find access to the cutaneous system, where, if they find suitable culture-media (the nidus upon which they feed) their deleterious action commences; leading to an aberrant cellular activity, caused by changes in contiguous surrounding fluids, unless the phagocytes succeed in devouring them.

We meet with brilliant clinical results in the treatment of summer diarrhea in children—those cases where the stools emit a characteristic odor, showing albuminoid decomposition or acid fermentation, when we feed them upon a low percentage, pasteurized, highly alkaline fresh milk, *without exhibiting even one grain of medicine.*

There are other etiologic factors, such as the physiological process of reflex irritation, of dentition, hard fecal accumulations, pregnancy, epileptiform convulsions, shock, worms, phimosis, adenoids, etc., causing temporarily, tendencies to morbid conditions of the skin, but the causa causam—the main etiologic element—I proclaim it boldly, is hyperacidity of the chyle in the duodenum; to this is due many ills to which the skin is heir. I have based my treatment upon this etiologic theory and have met with phenomenal confirmation of its efficacy, in my service at the Metropolitan Hospital, and in private practice, in the various forms of eczema, pemphigus, etc. I prescribe:

R.	Naphthalin	gr. i
	Ipecac	gr. i
	Charcoal	gr. iss
	Calomel	
	Strychnia	
	Pilocarpin	
	Arsenious acid, āā	gr. 1/100

The naphthalin causes antisepsis and inhibits the action of micro-organisms through the ileum and large intestine, thereby arresting organic fermentative changes. The charcoal, besides being a splendid antiseptic, converts the anaerobic condition of putrefaction into compounds which are not destructive to the tissues; the mercury, whether it acts upon the liver or not, destroys the bacterial forms in the duodenum and jejunum and lowers the blood pressure, thereby accelerating capillary circulation, thus favoring digestion and obviating putrefaction; the pilocarpin and ipecac exerting, at the same time, their influences upon the sweat glands and lymphatics; and finally the strychnin toning up the vasomotors and the whole cutaneous nervous system. I do not claim that my remedy will kill the pathogenic microbes in every instance, but it *does* limit their morbid energies, and by so doing gains time for the conservative remedial agencies of the organism to perform their normal function. Some pathogenic bacteria, which elaborate toxins, or ptomains in septic or putrefactive conditions, are otherwise entirely innocuous. We can unquestionably lessen their virulent activities by altering the environments of the pathogenic organisms. The stomach must be in proper condition, suitable diet enjoined, otherwise, no matter how specific the remedy may be, if the sympathetic nerve-centers, governing metabolic processes, standing for assimilation, are held in check from ptomain intoxication, no good effects can follow. Obstipation of bowels must in every case be combated, and as uric acid accumulates in the blood, as proved by Horbaczewski and Weintraud—that it is formed wherever living matter exists by the dissimulation of albuminoids—and as Kossel demonstrated, passing through the intermediate stages, nuclein, xanthin to uric acid. I generally follow my tablets by giving sulphate of magnesium, carbonate of lithium, and phosphate of soda in an effervescent form, the next morning.

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It is only recently that the term eczema parasiticum has been tentatively admitted to the nomenclature, but not yet added to the classification of dermatology—*causa latet: vis est notissima.*

101 Convent Avenue.

DISCUSSION.

Dr. W. S. Gottheil, New York City—I am sorry that I did not have a chance to hear the first part of Dr. Dalton's paper. There is a marked tendency now on the part of dermatologists to pay more attention than formerly to the influence of general systemic conditions on their etiology, and it is a tendency in the right direction. The paramount influence of the Vienna school led to the very general acceptance of their ideas of the exclusively local nature and origin of most dermatoses; but that influence seems to be declining, and we are turning more and more to the opinions which have always maintained their ground among the French dermatologists, and are paying more attention to the general systemic condition or diatheses which, in some instances, at least, are the basic facts of their etiologies.

Dr. S. Sherwell, Brooklyn, N. Y.—I am in perfect accord with the general sentiment of the paper, while perhaps not entirely so with the theory of the Doctor, as to the way it is involved. I do most thoroughly believe, however, that the hyperacidity of the blood, caused in my mind by defective assimilation and equally defective metabolism, is at the root, and acts as *fons et origo* of many cutaneous diseases, as notably in eczema and psoriasis, etc. I am glad that there seems to be—the Doctor's paper being one evidence—a reaction against the dogma of a certain school that everything pertaining to skin diseases should be almost entirely regarded as local manifestations and be so treated. I am glad to see that there is more common sense and a larger degree of attention paid to systematic alterations and visceral complications today in general dermatology, diagnostic as well as therapeutic.

Dr. L. Duncan Bulkley, New York City—I have long maintained that we are wrong in looking so wholly, as has been done in time past by many, for purely local causes for skin diseases. Perhaps some will remember that in my paper yesterday I quoted Dr. George Elliot, who, five or ten years ago, was almost a pure localist, very full of foreign views, and very strong in his advocacy of purely local causes, and last year he expressed the opinion that the causes of pustular lesions were more sympathetic than local. The Doctor is getting nearer the truth when he calls attention to hyperacidity—another name for the "gouty state," etc.—and we will have greater success if we take into consideration internal conditions. Each one of these remedies named by Dr. Dalton has certain qualities, which combined will accomplish what he claims. The prescription offered is a valuable suggestion.

Dr. W. R. Inge Dalton, New York City—Each and every article in that prescription has been thought out from what has been said by eminent dermatologists. I have been giving that remedy for the last three years, and in 162 tabulated cases of eczema, acne, pruritus and pemphigus, taking together all the cases I have had in my own practice, and in my service in the Metropolitan Hospital and Dispensary, in all these cases I have not had one single failure. Dr. Sherwell has asked me if I employ topical applications. I use them in every case, such as zinc stearates, with carbolic acid or salicylic acid or menthol, to allay itching, in eczemas, with appropriate dressings; also in all forms of dermatitis, but I do not rely upon them as formerly, only as a palliative to relieve distressing symptoms.

ACUTE SUPPURATIVE FOLLICULITIS OF THE SCALP.*

WM. S. GOTTHEIL, M.D.
NEW YORK CITY.

The inflammatory affections of the hair follicles are still, it must be admitted, an unsatisfactory chapter in our dermatologic text-books. Some hardly mention them at all; and those who do practically admit, with James Nevins Hyde, that "there exists a whole series of interesting and important inflammatory affections of the hairy parts which have not as yet been distinctly differentiated from each other, or the whole series from all others."

Periodical literature, on the other hand, contains the records of many cases of follicular inflammation of the scalp; and the great variety in their terminology is a good index of the confusion that still prevails upon the subject. Quinquaud has described a "Folliculite Déstructive"; Brocq a "Folliculite et Perifolliculite Décalvant"; Besnier an "Alopécie Cicatrisante Innominée"; Lailler an "Acne Décalvante"; Leloir an "Conglomerate Pustular Perifolliculitis"; Unna an "Ulerytnema Sycosiforme"; Sack a "Dermatitis Perifollicularis Atrophicans"; Lukasiewicz a "Folliculitis Exulcerans"; and Tommasoli a "Bacillogenous Sycosis." And this by no means exhausts the list. The American cases of follicular inflammation have been recorded by Fox, Holsten, Jackson and others.

There can be no doubt that several distinct affections characterized by follicular or perifollicular inflammation of the glandular structures of the scalp, and leading, with or without suppuration, to loss of hair and atrophic changes, are included in this list. The analysis and classification of these cases is a task that must await a wider experience and more exact records. Certain prominent characteristics are, however, noticeable in almost all of them. They are chronic, with a duration extending over months and years; they affect localized or isolated areas of the hairy skin; and they are rarely frankly suppurative, the inflammatory process being subacute, and the resultant atrophy interstitial in character.

If I now venture to add another to the recorded cases it is because it presents a clinical picture of a folliculitis of extreme acuity, pyogenic in character, universal in distribution, causing complete loss of hair, and not resulting in atrophy of the pilous structures. In the literature accessible to me I find mention in but two instances of a similar affection. R. Sabouraud,[1] under the designation of "Impetigo Pustulosa Peripilaris," describes an affection which he believes to be identical with the "Impetigo Pustulosa" which Boeckhart first recorded in 1887. It occurs usually upon the head, and always in connection with the hair. It begins

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*Presented to the *Section* on Cutaneous Medicine and Surgery, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

[1] Annales de Dermatologie et de Syphilographie for 1899.

with peripilar abscesses, of which there may be hundreds, which never get bigger than a pea, and never become confluent. They form rapidly, many appearing in a single night. The only premonitory symptom is a painful swelling of the cervical glands. Sabouraud believes the affection to be intimately related to acne suppurativa and necrotica, folliculitis, furunculosis, etc.

At the London Dermatological Society, June 9, 1899, J. J. Pringle showed a case in a 16-year-old boy having an eruption of the scalp beginning as red macules. In six weeks, in spite of treatment, the scalp was covered with crusts and scabs, removal of which showed every follicle to be the seat of an acute suppurative process, and the process resulted in the formation of deep scars. Each hair sat in the center of a yellow pustule. It looked like favus, said Pringle, yet examination revealed only the presence of numerous heaps of staphylococci. Crocker was of the opinion that the affection was a form of the dermatitis papillaris capillitii of Kaposi.

Of the two cases on which this paper is based, one only could be observed with sufficient care and for the requisite length of time. The first one was in a child of 2 years, and was apparently similar in all respects to the case recorded below. But the patient disappeared after a few visits to the clinic, and the history is too incomplete for recitation here. The second case was under observation for nearly a year, until long after all traces of the malady had disappeared and the parts had returned to a normal condition.

Lena G., a Russian, aged 16, came to the clinic on Feb. 18, 1899. She was apparently in good health, and had menstruated regularly for two years, up to three months from this date; after which time, without evident cause, she had been amenorrheic. She was a well-developed brunette with an abundant growth of thick black hair upon her scalp. Her past history was almost negative. So far as the surface of her body, other than the scalp was concerned, the only abnormality was the presence of a scar upon the left loin, the result of a burn received in childhood. This lesion was in perfectly normal condition; but the patient claimed that it was occasionally irritated and made sore by the pressure of the corsets that she wore.

Some three weeks before her appearance at the clinic the first lesion upon the scalp appeared, in the form of a painful little blister in the hair, near the forehead. At first pinhead sized, it gradually got larger and purulent. It finally ruptured and, when the crust that ensued came away, it carried off the hair shafts with it. So entirely painless were the later stages of the process that the patient did not know that the hair had fallen out until she accidentally discovered the red bald spot in the looking-glass. Immediately thereafter a few other small blisters appeared on the back of the scalp. They were hard and painful at first, like the primary one, so that the patient could not lay with the back of her head upon the pillow at night.

Dr. George Lesser, who referred the patient to me, first saw her at that time. There was then a red, depressed, bean-sized and tender cicatricial area near the frontal margin of the hair, and a number of very tender and indurated lesions on the back of the head, over which the hair was matted together with secretion. Treatment with various applications did not stop the progress of the affection. New nodules appeared, especially upon the vertex, all of which became suppurative, until they numbered several dozen. As it was impossible to treat the scalp effectively in the condition in which it was in, and the patient refused to have her hair cut off, she was sent to a well-known dermatologist for diagnosis and treatment. The diagnosis made was evidently pediculosis, for she was given an application to use for twenty-four hours, with the warning not to go near the fire or a light while employing it; and inquiry elicited the fact that it was the ordinary kerosene, vaselin and olive-oil application, with a little balsam of Peru, commonly employed in that affection.

This application the patient used for one day, and she claims that it burned her so terribly that she lay awake screaming with pain the whole night. Emollient applications were then ordered by the attending physician, and continued for some days with a certain amount of relief. But few nodules appeared continually upon the scalp; and as the older crusts became detached they carried away the hair entangled in them, without pain. The patient began to feel very badly; she was feverish, her sleep was disturbed, and she lost her appetite. The only way in which she could rest in bed was laying prone upon her face.

On February 21 I carefully examined her. She looked pale, depressed, and anxious. Her head was covered with an abundant growth of long, bushy, coarse black hair. Near the scalp the hair was matted firmly together and attached by dried secretion, ointment, etc. There were no traces of pediculi or their ova. Scattered all over the scalp were numerous pea to quarter-dollar-sized, reddened, slightly depressed bald spots, very tender to the touch. Between these atrophic areas the scalp was mostly hidden by the crusts; but in the few places where it was still visible it was covered with isolated minute red papules, papulo-pustules, and pustules, each of which was pierced in its center by a hair. Removal of the crusts was excessively painful; all the hair of the affected area came away with them when it was done, and a vividly red, moist depression remained behind. The entire scalp was edematous, and excessively tender to the touch. The cervical lymphatic glands were moderately swollen. She was ordered to thoroughly soak the head with a 2 per cent. solution of salicylic acid in olive-oil, and then to attempt, with soap and warm water and careful combing, to remove the crusts.

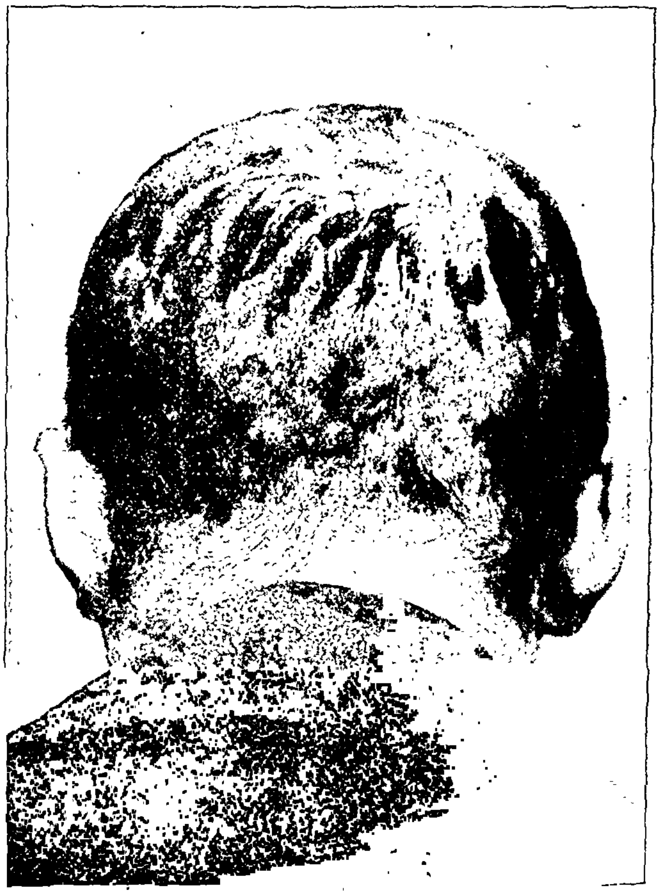

Fig. 1.—Folliculitis of scalp.

On February 23 I noted that there was but slight improvement. The patient claimed that it was impossible to remove the crusts on account of the pain. Several of the larger areas from which the crusts had fallen were swollen and edematous, and in two or three of them fairly large subcutaneous pus accumulations were found and opened.

On February 26 suppuration was progressing actively under the crusts, and a number of new and larger pus collections had to be opened. She was directed to cut off her hair close to the scalp.

On March 1 I noted that thick masses of crusts containing short hair still covered most of the scalp, the entire area of which had been or was then affected. Removal of these was still excessively painful; the surface of the scalp thereafter being as above described. Even in masses that were perfectly soft every hair came out bodily with the crusts; apparently these latter were entirely detached from the papillæ over the scalp, and it was only the removal of the crusts that caused pain. The scalp was now studded with bald areas, some of them quite large from the coalescence of smaller ones. Few new pustules had appeared recently, probably because every hair follicle had been or was affected. At this time the accompanying photograph (Fig. 1) was taken.

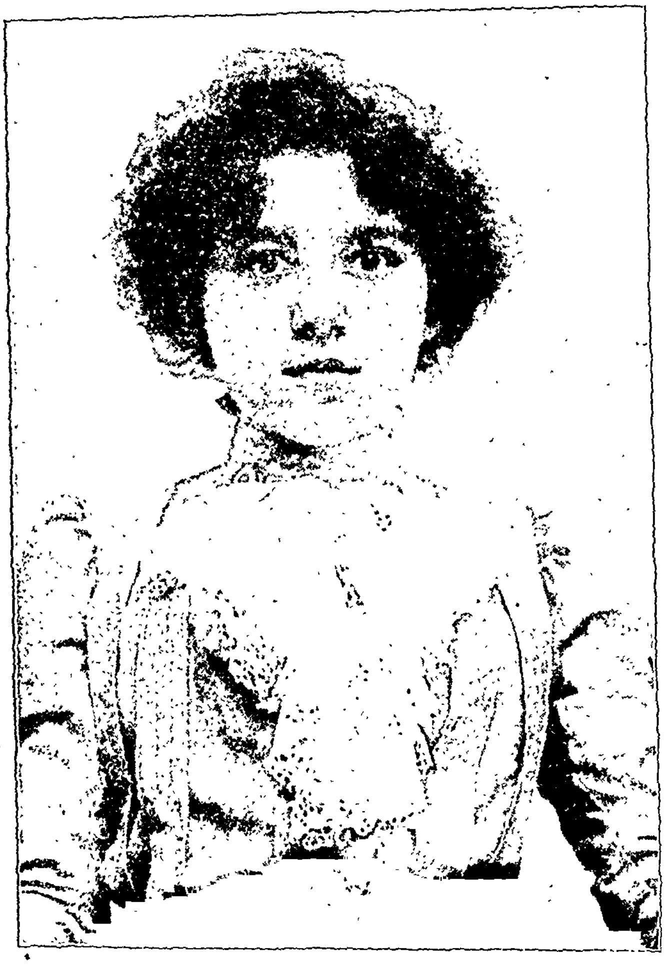

Fig. 2.—Folliculitis of scalp.

Several careful microscopic examinations of the hairs and crusts had been made during the two weeks preceding. The hair shafts were normal, not frayed, and contained no fungus. The crusts and scales consisted of masses of epithelium and fat, with detritus and bacteria, but neither mycelium nor spores. The patient refused the proposition to have the crusts removed and the scalp thoroughly cleansed under anesthesia. She was directed to continue the daily washings with soap and warm water, and to keep cloths thoroughly soaked with carron-oil continuously on the scalp.

On March 18 I noted that I had seen the patient a number of times since the last preceding record, and her condition had not improved. She looked badly, her appetite was greatly impaired, sleep was disturbed, and she was losing flesh rapidly. New pustules had occasionally appeared, pus infiltrations had to be opened and many of the older crusts had fallen off. Her scalp was apparently two-thirds denuded of hair; the bald areas were still reddened, swollen and tender, but a little less so than formerly. What hair still remained was matted down in smaller isolated bundles. Removal of crusts was a little easier, and the skin below less reddened and moist. In some of the older denuded areas a few new minute pustules were visible, not demonstrably connected with the hairs. They were beginning to whiten, and minute examination showed that fine lanugo hair was springing up over them. A few abscesses were opened, and a 3 per cent. xeroform oil applied to the scalp.

March 31 a new crop of pustules had developed over the entire occipito-cervical region, where the process had run its course, and lanugo hair was reappearing. Each papule was discrete, and pierced in its center by a hair. This gave me an excellent opportunity to study the process from the beginning. The pustles grew to small, French-pea size, and finally ruptured, extruding the hair. There was no crusting or pus collection on account of the smallness of the pilous structures and the absence of matting. The process in each case lasted about a week.

On April 14 I noted that most of the crusts were gone. No new lesions had appeared, and the older denuded areas were whitening, and covered with pale, fluffy lanugo hair. The patient claims that the xeroform oil had given her more relief than any of the other applications. For the first time in many weeks she was able to sleep in the ordinary position. She rested better, and her appetite was improving.

I saw the patient from time to time for three months thereafter. No new lesions developed. Every single one of her original hairs came out as the crusts were finally removed. The lanugo hair had increased in amount and strength, and was beginning to assume the appearance of ordinary hair.

In December, 1899, this last photograph was taken. As can be seen, there has been complete recovery. The only difference is that the new hair is a little finer and lighter than the old.

I can find no better designation for the affection than that of acute suppurative folliculitis of the scalp. I am not ready to propose an explanation of its cause. It is possible that the kerosene application had some effects upon its spread; but the folliculitis began and was quite extensive before it was employed, and the subsequent recrudescence of the disease upon the back of the head occurred entirely independently. The acuity and generalization of the process, and its superficiality, as shown by the fact that, though all the follicles were affected and all the hair detached, the papillæ were not destroyed, presents a picture differing essentially from the ordinary forms of folliculitis, and resembling only the two cases of which I have made brief mention in the early part of this paper.

Glasgow's Smallpox.—*The Lancet* of March 9 editorally considers Glasgow's smallpox predicament, for in no month has she been entirely free from the disease since its introduction there by a sailor about a year ago. Primary vaccination is well attended to, but there is absence of all official supervision and "grave reason to fear that one mark and two mark vaccination is much commoner than it ought to be." Therefore, revaccination is being advocated by the corporation and every medical man is being remunerated for all vaccinations performed on behalf of the sanitary authority. Before this was done the people did not realize the dangers and few took precautions to protect themselves. The consequent increase of smallpox was followed by an increase of vaccinations, so that now, in a population of about 700,000, about 300,000 have been recently revaccinated.

OPERATIONS FOR INJURIES TO THE MEDIAN AND ULNAR NERVES.*

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CHICAGO.

It is my intention to discuss the subject entirely from its practical standpoint and to relate my personal experiences in dealing with the injuries of the median and ulnar nerves. These nerve trunks are most liable to be injured because of their exposed anatomic position on the arm; the most frequent result of violence applied directly to the nerve is complete division.

Functional disturbances following incised or lacerated wounds are too often overlooked and the symptoms attributed to shock. The degree of shock in such cases is not proportionate to the size of the wound or to the degree of nerve injury. The pain following the most trifling cut will often cause extreme depression. The injured person, who already is suffering pain and is in a state of nervous expectation and dread of more pain to be caused by the stitching, is thereby frequently placed in a condition of greater shock, which renders his statements relative to sensory and motor disturbances unreliable. Therefore, after direct examination of the open wound, if the least doubt exists, the necessity for a thorough operative exploration can not be overestimated.

The surgeon's duty begins with the thorough examination of every divided structure, especial attention being paid to nerves, and his duty ends only when he has proved his skill by his success, or has shown his failure to be due neither to ignorance nor negligence. The ape-hand deformity which follows wounds of the median nerve and the claw-hand deformity which follows wounds of the ulnar nerve, impress upon the surgeon his responsibility and the necessity for the most painstaking care and deliberation.

Case. 1.—The patient was a girl 9 years of age, who was brought to me in Paris, Ky., on June 15, 1891. Her general health was poor and the presence of a number of unsightly scars on the neck, with a bad family history, showed that she was a tuberculous subject. For about a month she had complained of an aching pain in the left forearm, so was disinclined to use it.

I found an enlargement the size and shape of a small hen's egg at the junction of the lower and middle thirds of the ulna. With the assistance of Dr. T. A. Roby, I made an incision at this point, evacuated a quantity of pus and, on probing, found the ulna denuded of its periosteum and roughened. I chiseled away the sclerosed shell of bone, cleaned out the entire tuberculous deposit, swabbed the cavity with Churchill's tincture of iodin, and packed the wound with iodoform gauze, that it might heal by granulation from the bottom. The wound was dressed every other day for two weeks, when I was obliged to leave Paris and, after that time, my father, Dr. D. D. Eads, dressed the wound regularly until it had entirely healed.

In January, 1892, I revisited Paris and, to my surprise, was informed that, at the time of the operation, I had divided the ulnar nerve. I found the muscles markedly degenerated and complete abolition of sensation in the territory supplied by the ulnar nerve. As I believed that the nerve had been divided, I decided to make a new operation to reunite it if possible. I accordingly made an incision three inches in length directly over the ulnar nerve and found it embedded in a mass of cicatricial tissue. The incision was now extended upward and downward for five inches and the ulnar nerve dissected from its position. As I found it had not been severed I made a new bed for it by stitching a layer of loose fascia over it.

The patient noticed improvement as soon as she awakened from the anesthesia and stated that she could now feel her little finger. She rapidly improved without any further treatment and recovered with complete restoration of function.

This case is of marked interest, because: 1. The child was too young to give an accurate account of the loss of sensation and power, which was accidentally detected by the difference in size of her hands and forearms. 2. The loss of both sensation and motion was evidently gradual and not sudden. 3. The presence of cicatricial tissue in the region of the affected nerve, whether of accidental or operative origin, is suspicious and should be considered a probable cause of loss of function in the territory supplied by that nerve. 4. Exploratory operation should be made without delay when doubt exists.

Case 2.—During my service as resident surgeon in Jefferson Medical College Hospital, in Philadelphia, in 1892, I operated on the following case of injury to the median nerve: A young man about 26 years of age had been wounded by a circular saw. He entered the accident department of the hospital, accompanied by his foreman, whose description of the accident and the amount of hemorrhage which followed caused me to order him taken to the private operating-room, where he was immediately anesthetized. On loosening the provisional tourniquet, copious arterial bleeding ensued, which was promptly arrested by digital compression of the brachial artery. After protecting the wound by several thicknesses of gauze, an Esmarch bandage was applied to the arm from the wrist well above the wound, and examination showed a lacerated wound about two inches in length extending obliquely across the inner antero-lateral aspect of the right arm about an inch and a half above the elbow. I enlarged the wound upward and downward along the course of the brachial artery, which I secured and ligated. The biceps and brachialis anticus muscles were partially divided. The divided median nerve was in plain view with the ends rather ragged. I trimmed off the ragged ends with sharp scissors, the net loss on both ends of the nerve not amounting to more than one-quarter of an inch, and placed the nerve in its natural position in the wound with the ends almost meeting. Accurate approximation was made easily and without tension.

A single transfixion stitch of fine silk was first introduced by means of a fine Hagedorn needle and tied, bringing the nerve ends together. This was reinforced by two silk sutures, one on either side, which were passed only through the sheath of the nerve.

The external wound was closed with catgut, the arm flexed and a large dressing applied. The arm was maintained in a flexed position for eight days, when it was found that the wound had united by first intention.

Paralysis resulted from the accident, with the following symptoms: Loss of pronation; impaired wrist flexion and hand-grasp with thumb extended, and anesthesia over the area supplied by the median nerve.

The first evidence of restoration of function was a return of sensation about three weeks later. Return of mobility was distinctly noticeable two months later, and when I saw the patient six months after the accident, he had acquired a fair use of the arm and expected to return to work the following week.

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* Presented to the Section on Surgery and Anatomy, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

I regard the early and favorable result of this case to be due to the clean wound, and simple division of the nerve with slight destruction of nerve tissue, which permitted accurate approximation within an hour after the accident.

Case 3.—G. H., 50 years of age, of Philadelphia, while in *Atlantic City, N. J.*, sustained an incised wound of the anterior aspect of the right forearm close to the wrist-joint. The radial and ulnar arteries, the flexor carpi radialis, flexor sublimis digitorum and palmaris longus tendons were divided. There was complete division of the median and almost complete division of the ulnar nerve. The accident was caused by the sharp blade of a knife which lay in the sand where he was sitting. On attempting to rise he pressed his wrist upon this knife blade and thus sustained the injury.

After temporary arrest of the hemorrhage, he hastened to the office of Dr. Boardman Reed. The patient was anesthetized and with the assistance of Drs. Boardman Reed and Ella Reed, I proceeded to tie the radial and ulnar arteries. I enlarged the wound upward and downward and found the divided median nerve with the ends almost approximated. I united the ends with one direct catgut suture passed through the body of the nerve. A second fine catgut suture was passed through the divided portion of the ulnar nerve. The divided tendons were found without difficulty and united with catgut.

The forearm and hand were supported in a flexed position by a suitable splint and so maintained for a period of three weeks. Wound healed by first intention.

Total paralysis and complete anesthesia resulted from the accident in the area supplied by the median nerve, but no appreciable change could be noticed in the area supplied by the partially divided ulnar nerve.

The forearm and hand were well massaged and passive motion of the fingers made to prevent them from becoming stiff.

Three weeks later the patient announced the return of sensibility in the previously insensitive area, but was much troubled because of his inability to approximate the thumb and index finger and thus hold a pen. Evidences of increasing motility rapidly followed. Ten weeks after the accident he was able to write at his desk, using his thumb and fingers with ease. He still complained of some stiffness about the wrist-joint, but expressed confidence that this would soon pass away, as it had greatly improved up to that time.

In this case there was every reason to expect speedy and complete restoration of function, as the nerve ends lay in their normal position in the wound, almost touching, thus permitting accurate approximation. In this instance I used catgut, as silk could not be obtained.

I prefer silk to any other suture material because: 1. Its permanency does not delay the union nor interfere with complete recovery. 2. Better approximation is obtained by silk. This is a most essential feature to early success, and, when tension is great, we can not dispense with it.

Relaxation by position, rest and protection by a suitable splint are conducive to successful union.

The patient was in excellent health at the time of the accident and thereafter. Massage was commenced early to overcome the likelihood of impaired mobility due to inflammatory adhesions of the joint and synovial sheaths. The arm was rubbed daily with alcohol and electricity applied.

Case 4.—J. H., a male, 34 years of age, consulted me Dec. 4, 1894, and gave the following history: On Feb. 11, 1893, while he was helping to unload a large sheet of plate glass, one of his helpers slipped on the icy pavement and, in the patient's effort to save the glass, he sustained a lacerated wound extending obliquely, from before backward along the inner side of the right arm two inches above the elbow-joint. Profuse hemorrhage followed. He was taken to the nearest surgeon—a man of good reputation—who ligated the bleeding vessel, and closed the wound, which healed promptly. At his next visit to the surgeon he complained that his hand felt numb, that he could not close it and thought that some of the "cords" had been cut.

When he consulted me, the appearance of the arm and forearm was characteristic of complete paralysis of the ulnar nerve. The muscles of the forearm supplied by the ulnar nerve were atrophied, there was marked wasting of the hypothenar eminence and hollowing of the thenar eminence. Partial flexion of the last two phalanges of the ring and little finger and extension of the first phalanges of the same fingers completed the deformity. I instructed him to grasp my index finger, which he accomplished with difficulty by first flexing the last two phalanges of all the fingers. This forced attempt caused flexion of the wrist-joint, which brought the finger more into his grasp. In the act of flexion the last two fingers did not participate as promptly as the fore and middle, and separation and approximation of the fingers could not be accomplished.

Partial anesthesia followed the division of the nerve, but sensation had returned to an appreciable extent two months after the accident, so that at the time of my examination the only area which appeared partially anesthetic was that along the ulnar side of the hypothenar eminence, and little finger.

Arrangements were made for operation at the patient's house, and, assisted by his family physician, the late Dr. Hunt, I made an incision three inches in length directly over the ulnar nerve and at right angles to the old scar, which marked the center of my incision. Upon reaching the deep fascia, I incised it on a grooved director as a guide and thus exposed the internal intermuscular septum, which was in turn divided in a similar manner bringing into view the severed interior profunda artery which, together with the triceps muscle, served as my guide in locating the ulnar nerve. I lengthened the incision in an upward direction for about two inches, found the ulnar nerve, traced it downward and found the upper bulbous end embedded in a mass of scar tissue which I carefully dissected away, exposing the nerve for nearly three inches. The distal end was also dissected from its bed of scar tissue.

Repeated sections were made of the proximal portion, with sharp scissors, before I reached healthy nerve fibrillæ, the loss amounting in all to about three-quarters of an inch. One-quarter of an inch was removed from the distal end in a similar manner. This left a decided gap from loss of substance. An attempt was then made to approximate the ends by stretching and by position of the arm, but this was unsuccessful. A flap three-quarters of an inch in length was taken from the proximal portion to bridge the gap, and was united to the distal portion by one transfixion stitch of silk reinforced by one anterior and one posterior stitch. The arm was dressed in extension and healed primarily.

A month after the operation the patient went to

Denver to live with a sister on account of his disability, and consequent inability to work, but on April 17, 1895, four months after the operation, he wrote me that he was driving a milk wagon, was able to take entire charge of a milk route, that he could close his fingers against one another, and also bring them down to the palm of his hand with considerable force. Although I have not heard from him since, I judge from this statement that in this case the operation is rapidly proving successful.

Case 5.—T. D., a boy 12 years of age, was brought to me on Sept. 18, 1897, with a lacerated wound of the right elbow-joint, caused by falling on a broken bottle. The wound extended from the outer border of the shaft of the ulna obliquely upward and inward over the posterior surface of the joint to the internal condyloid ridge one inch above the condyle.

During the delay entailed in finding the boy's father to inform him of the gravity of the accident, I obtained a clear account of the division of the ulnar nerve as manifested by its immediate effects. I asked the boy if his arm pained him, and his reply was: "No, but there is such a funny feeling all along here"—referring to the inner side of the forearm and fingers—"it feels like it's dead." Extending my index finger, I directed him to grasp it. He was unable to do so and cried out that he could never play ball again.

The patient was anesthetized and, with the assistance of Dr. J. H. Walsh, I made an examination and found the olecranon process separated from the ulna and the internal condyle from the humerus. In order to obtain a better view of the joint and its surroundings, I enlarged the wound by incisions upward and downward and dissected the superficial fascia from its deeper attachments, retracted the flap and by flexion exposed the entire elbow-joint. In order to facilitate adjustment and prevent lateral displacement, I united the olecranon process to the ulna by two silver-wire sutures and the internal condyle to the humerus by one suture of the same material. The proximal extremity of the divided nerve was found one inch above the inner condyle and the distal portion retracted for more than an inch. The ends were easily brought in good apposition by a single chromicized catgut suture passed directly through the body of the nerve, reinforced by a fine silk suture passed through the sheath on either side.

With scissors and tissue forceps I now went repeatedly over every portion of the wound most carefully, clipping the ragged tissue with its adherent foreign bodies. Sterile water was used exclusively, with the exception of hot saline solution which was employed to remove the blood clots. The complete cleanliness, perfect hemostasis and avoidance of antiseptics made me decide to close the wound with catgut sutures and without drainage. A large dressing was applied and the arm rendered immobile by a suitable splint.

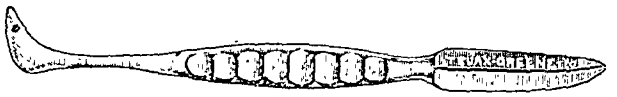
With the exception of a post-operative rise to 101 degrees on the evening of the second day, the temperature remained normal throughout. The wound was exposed on the seventh day and found to be entirely healed by first intention. The arm was retained in position for one month when, much to my surprise, the patient exhibited a fair degree of movement of the elbow-joint and of the ring and little fingers. In closing the hand he could not bring any of the finger tips in contact with the palm, but a few days later he accomplished this with ease with the exception of the little finger, which required an effort to bend to this extent. Separation and approximation of the fingers were unimpaired. More than a month after the accident a point of tenderness developed over the internal condyle and this went on to suppuration, which ceased, however, shortly after the removal of the silver wire suture.

Massage and active and passive movements were patiently continued for two months. At this time there was but slight difference in the strength of the grip in favor of the right hand.

This case teaches: 1. That next in importance to accurate apposition in case of divided nerves is the avoidance of inflammation or suppuration by cleanliness, hemostasis and irrigation with sterilized water. 2. Antisepsis must yield to asepsis when a joint is opened. 3. Buried silver-wire sutures will cause irritation even in an aseptic wound, and since this experience the writer has substituted chromicized catgut, which he considers preferable and has found sufficiently durable. 4. Immobilization in extended position lessens tension.

TECHNIQUE OF THE OPERATION.

Antisepsis can be secured only by the use of the brush, soap and water, permanganate of potash, oxalic acid and sterilized water. My unpublished experiments in the laboratory of Dr. W. M. L. Coplin, of Philadelphia, in December, 1891, proved conclusively the uselessness —from a practical standpoint—as antiseptics, of bichlorid of mercury, boric acid, carbolic acid, creolin, etc. Permanganate of potash stands alone as the ideal destroyer of germs. The skin of both operator and patient marks the line between antisepsis and asepsis.



The first and leading requisite in nerve suture is an accurate knowledge of the regional anatomy of the part. The surgeon needs every guide to render the finding of the divided nerve ends more easy. The ends may be displaced, retracted, adherent to fascia or tendons, etc., or embedded in scar tissue. When difficulty is experienced in finding the nerve at the seat of the original wound, it should be found in its known position and traced to the point of division. This procedure materially simplifies the operation and involves only a lengthening of the incision. The upper central portion of a divided nerve is enlarged, bulbous and easily found, while the lower or peripheral portion is filamentous and more difficult to discover.

A second requisite is the provision of ample operating space, and a long incision does not add appreciably to the gravity of the operation.

The Esmarch bandage should be dispensed with wherever possible, as its removal is followed by oozing which necessitates drainage, and as it prevents stretching of the nerve, thus rendering the nerve ends more liable to injury by the forceps in the hand of the operator. Slowly and precisely we proceed to find the nerve ends and free them from their imprisonment in scar tissue or their attachments to tendons and fasciæ.

The dissector—a cut of which is here given—has been invaluable to the writer in his operative work and doubtless will prove serviceable to the general surgeon. This instrument combines the advantages of a director, dissector and scalpel handle. It is made from a single piece of metal, 6½ inches in length, consisting of a central portion, the handle and two extremities, one of which is hook-shaped and fenestrated near the end, and the other, slightly curved and blade-shaped, has

Date.	Operator.	Nerve.	Nature and Location of Lesion.	Time of Suture.	Suture Material.	Result.
1863	Nélaton	Median	Extirpation, neuroma	Immediate	Silk.	Motion normal after 2 years.
1864	Langier	"	Injury, forearm.	"	"	Restoration of sensation after 17 months.
1870	Huter	Ulnar	Resection, elbow	"	"	Has no use of hand, but after 10 years has slight sensation at wrist.
1871	Jessup,	"	Injury, wrist	9 years	"	Hand useful after 8 months; *some atrophy* of muscles.
1875	Notta	Median	Extirpation, neuroma	Immediate	Silver	Sensation and motion restored after 8 mos.
1875	Simon	" and ulnar	Stab wound, arm	10 months	Silk and catgut	Arm useful after 18 months.
1875	Vogt	"	Injury, wrist	Immediate	Catgut	Restoration of motion after 8 months.
1879	Koenig	"		"		Partial restoration; atrophy after 15 mos.
1879	Koenig	"		"		Atrophy after 2 mo.; some mobility of thumb.
1879	Page	"		"		Complete restoration of motion after 10 months; slight restoration of sensation.
1879	Wilins	Ulnar	Injury, resect, elbow.	"		Marked improvement after 10 months.
1879	Tillmanns	"	Incised w'nd, forearm	"	Catgut	Useful hand after 19 months.
1879	Thiersch	Median and ulnar	Glass wound, forearm	"	"	Normal hand; slight atrophy after 2 years.
1880	v. Esmarch	Median, ulnar and musc.-cutaneo's.	Stab wound, arm	"	"	No result after 13 years.
1880	Kraussold	Median, ulnar and radial.	Incised wound, wrist.	"	"	Free use of hand after 3.5 months.
1880	[illegible]	" n.	Inc'd w'd, above wrist	2 months	Silk and catgut	Mobility normal after 3 weeks.
[illegible]	[illegible]		" " " "	6 months	Catgut	Complete restoration of function after 8 mos.
1881	Page	"	" " " "	6 months	"	Normal after 18 months except atrophy of little finger.
1882	Koenig	Ulnar.	Injury, arm.	1 year		Arm fit for any work after 1 year; disturbance of sensibility of little finger.
1882	Zesas	"	Glass wound, wrist	5 5 months	Catgut	Sensibility almost and motion quite restored after 2 mos.; complete recovery later.
1883	Chrétien	Median	Injury, wrist	Immediate		After 18 mos, contraction of abd. flex. brevis pollic. and opponens, equal on both sides.
1884	Tillaux	"	Glass wound, wrist.	4 months	Catgut	Complete restoration of sensation and motion after 6 weeks.
1884	Tillaux	"	" " "	14 years.	"	Complete restoration of functi'n after 6 wks.
1884	Banks	"	Injury, wrist	6 months	"	Complete restoration of function; some atrophy of first 3 fingers.
1884	v. Wahl	Median, ulnar and radial	Injury, axilla	Immediate	Silk	Partial rest[illegible] f function after 4 years.
1885	Shepherd	Ulnar	Axe wound, elbow	3 months	Catgut	[illegible] ter 2 weeks.
1885	Gunn	"	Extirpation, neuroma	Immediate	To med. wtih catgut.	[illegible] of funct'n after 6 mos.
1885	v. Wahl	Median	Injury, axilla	"	Silk	[illegible] on ulnar side of ring finger, but after 8 m. not on little finger or end phal.
1885	Jones	Ulnar	Fracture, int. condyle	Secondary		Contraction of muscles of *forearm normal* after 3.25 years; hand useful as other.
1885	Schüller	Median	Glass wound	*18 months.*		Rapid restoration of sensory functions.
1885	Richardson	"	" "	1 month	Catgut	Partial restoration of motor functions after 6 weeks; complete restoration.
1885	Richardson	"	Stab wound.	80 days	"	Restoration of sensory and motor functions after 1 year.
1885	Pollaillon	Median and ulnar	Glass wound, forearm	Immediate	"	Restoration of sensory and motor functions after 4 months.
1886	Tillmanns	" " "	Wound, forearm	Secondary	"	Partial restoration sensory of palm, flexion and extension only of the finger, atrophy of small muscles of thumb 2 years after.
1885	Pye	Ulnar	Glass wound of wrist.	Several weeks.		Restoration of normal function after 1 year.
1886	Tillaux	Median	Injury of wrist.	3 5 years		No improvement after 15 months Relief of nerve from constricting cicatrix after one-fourth year. Complete recovery.
1888	v. Wahl	"	Injury, arm.	Immediate	Silk	Complete restoration after several months.
1888	v. Wahl	Median, ulnar, radial, etc.	Injury, axilla.	"	"	No improvement of motor function and atrophy after 7 months.
1888	Rayner	Median		4 months		Restoration of sensibility of forearm; no result in territory supplied by median and ulnar after 9 months.
1891	v. Esmarch	"	Incised wound, wrist.	Immediate	Catgut	Restoration of sensibility in short time; complete motor restoration after 1 year.
1886	Jencken	Ulnar	Incised w'nd, forearm	6 months	Horsehair	Restoration of motor function after 2 years; atrophy of palmar muscles.
1884	Harrison	Median and ulnar	Glass wound, wrist.	18 months	Catgut	Complete recovery after 18 months.
1886	Scott	Ulnar	" " "			Useful hand; limited flexion of 1st, 2d and 3d fingers; sensibility restored except to little finger after 18 months.
1886	Scott	Median	" " "	4 5 months	"	Marked improvement after 4 months.
1880	Hulke	"	" " forearm	10 months	"	Restoration of sensory function after 3 wks.
1880	Ogston	Ulnar		5 weeks	"	Restoration of function after 4 weeks.
1879	Hulke	"	Slate wound, elbow	15 months	Silk	Restorat'n of sens., not of mot'n, after 2 mos.
1884	Surmay	Median	Glass wound, r. wrist	5 months	Silver and catgut	Restoration of function after 6 wks.; returned to work on leaving hospital.
1887	Tillaux	"	" " r. hand.	3.5 years	Horsehair	Rapid restoration of function after 11 days; complete after 4 months
1887	Bland-Sutton	"	" " r. wrist.	10 weeks		Rapid restoration of sensation after operation; complete in 6 weeks.
1886	Bouisson	"	Wound forearm.	Immediate		Beginning sensation after 5 days.
1886	Schwartz	"	Incised wound, wrist.	6 hours	Catgut	Par. restor'n. of sens and motion after 3 wks.
1881	Page, H. W.	Ulnar.	Glass wound, l. wrist.	6 months	"	No restor[illegible] after 4 weeks.
	MacCormac	"	Glass wound, forearm	6 years.	"	[illegible] after 9 days.; com[illegible]storation after 6 months.
1885	MacCormac	"	Gunshot w'd, forearm	1 month	Silk	Increased sensation in fingers after 1 day; can use hand quite well after 2 weeks.
1886	MacCormac	Median	Neuroma.	5 years.	"	Partial restoration of sensation after 2 wks.
1881	Langton	Ulnar	Incised w'nd, forearm	Immediate		Perfect sensation and motion after 1 mo.
	Langton.	"	Release from cicatrix		atgut	No return of sensation after 3 weeks.
	Halsted	Median and ulnar	Glass wound, arm	8 months	Horsehair and catgut	Function restored after 6 months
1883	Bull	Ulnar		7 weeks	Catgut	No benefit after 6 months.
1897	Rafin	Ulnar.	Glass wound, forearm	1 day	Chromicized catgut	Returning sensation and motion after 5 wks.
1897	Curtis.	Median	Punctured w'd, wrist	7 months		No improvement after 2 weeks; perfect restoration of function after 5 mos.
1893	Ochsner	" and ulnar	Glass wound, wrist	3 months	atgut	
1893	Ochsner	Ulnar.	Gunshot wound, arm.	10 days	"	Sensation began to return after 10 dy; perfect restoration of function after 3 years.
1895	Ochsner	"	Stab wound, arm	4 months	"	Slight sens. in 3 wk; par. restoration in 3 yr.
1895	Ochsner.	"	Stab wound, forearm.	6 weeks	"	Almost complete sensation after 21 hours; complete restoration of function after 1 yr.
	Bowlby	"		7 months	"	Immediate return of sensation; still slight atrophy, but improving, after 1 year.
	Bowlby	Median	Wound, forearm	9 months		
1884	Menzies	"	Glass wound, wrist	Immediate	Catgut	Return of sensation after 1 day; perfect recovery after 7 months.
1893	Berger.	Ulnar.	" " forearm	4 months		Almost immediate return of sensation.
1888	Ashhurst	Median	Knife wound, wrist	11 months	Silk	Improvement after 5 weeks.
1887	Reclus-Segond	" and ulnar	Glass wound, wrist	2 hours	Catgut	Immediate return of sensation; atrophy of muscles.

a single longitudinal groove in the center. The latter is used for the isolation of structures located in tissue which can be pushed aside, thus avoiding hemorrhage and keeping the field of operation dry. This is especially valuable in breaking down adhesions and in the exposure of important vessels and nerves. The single groove serves as a guide for the back of the knife in making the incision, and takes the place of the grooved director. Therefore this extremity may be regarded as a combined grooved director and separator of tissues. When greater force is required in dissection, the hook-shaped extremity is brought into use. The eye acts as a ligature carrier; the blunt extremity of the hook, which can not be forced through the wall of the blood-vessel, makes it a convenient aneurysm needle.

The nerve ends are freshened ready for accurate approximation, which is assisted by position and, if necessary, by stretching of the nerve trunk. An ordinary cambric needle carrying a single, direct suture of chromicized catgut is passed through the nerve on each side, from one-eighth to one-quarter of an inch from its extremities, and tied, but not too tightly, as accurate approximation is easily defeated by displacement due to overlapping. Two or more fine silk sutures are now passed through the sheath of the nerve, to more accurately complete the approximation and to increase the strength of the union. In tying these sutures, great care must be taken to prevent the sheath from being folded in between the nerve ends. If, after approximation, there is too great tension and consequent liability of the sutures to cut out, I would recommend that a relaxation suture of chromicized catgut be passed in an antero-posterior direction through the substance of the nerve above the first suture.

Restoration of function is often delayed and this delay is proportionate to the degree of degeneration of the peripheral end, the consequent atrophy of muscle and fixity of joints. These very symptoms, however, may result from a widespread septic *inflammation* complicating the original wound and causing inflammatory adhesions of joints and tendons with resulting impairment of mobility. (Rose.)

In the hands of the most careful operator some cases will result in total failure. Fortunately, however, the splendid results in recent years have aroused medical men and dispelled all doubt as to the necessity of the measure. I have obtained from the literature reports of 294 cases, with the following results:

	Successful.	Improved.	Failure.	Total.
Primary suture	40.52% 62	40 52% 62	18.95% 29	153
Secondary suture	43.26% 61	43.26% 61	13.38% 19	141
Total	41.83% 123	41.83% 123	16.33% 48	294

From my own experience, therefore, fortified by the observations of others, I believe we are justified in saying to our patients that, while positive results can not be promised, the great majority of operations are followed by cure, and that in the majority of the remainder improvement takes place after operation. Without operation the tendency is always to grow worse. This is an assurance of hope to the sufferer, and yet its correctness is borne out by our experience.

SUMMARY.

Date.	Name.	Nerve.	Primary.							Secondary.						
			Successf'l		Partial.		Failure.		Total.	Successf'l		Partial.		Failure.		Total.
			No.	Per cent.	No.	Per cent.	No.	Per cent		No.	Per cent	No.	Per cent.	No.	Per cent.	
1887	Bowlby	Median	6	31.6	11	57 9	2	10.5	19	1	16.67	5	83 33			6
		Ulnar	4	26.70	7	46 70	4	26 70	15	2	20	5	50	3	30	10
		Median and ulnar	2	18.18	6	54.54	3	27.27	11			1				1
	Literature to 1885	Median								3	27.27	5	45 45	3	27.27	11
		Ulnar								5	55 56	1	11.11	3	33.33	9
		Median and ulnar								1	16 67	2	33.33	3	50	6
		Median and radial										1				1
1896	Huber	Median	15	57.69	7	26.92	4	15.38	26	8	42 10	9	47.37	2	10.53	19
		Ulnar	12	38.71	13	41 94	6	19.35	31	7	29 17	15	62 50	2	8.33	24
		Median and ulnar	3	23.07	7	53.85	3	23.07	13	2	20	6	60	2	20	10
		Median and radial	2						2			1				1
		Median, ulnar and radial	1						1							
		Ulnar and int. cutaneous					1		1							
	Literature by writer	Median	7	46.67	4	26 67	4	26.67	15	14	87.50	2	12.50			16
		Ulnar	4	50	2	25	2	25	9	13	65	7	35			20
		Median and ulnar	1	50	1	50			2	4	66 67	1	16.67	1	16.67	6
		Median, ulnar and radial	1	33.33	2	66.67			3							
		Median, ulnar and musculo-cut	1	33 33	2	66 67			3							
	Writer	Median	1						1							
		Ulnar	1						1	1						1
		Median and ulnar	1						1							
		Total	62	40.52	62	40.52	29	18 95	153	61	43.26	61	43.26	19	13.48	141

CONCLUSIONS.

1. Provision of ample operating space is the first requisite to success.

2. Suppuration is inimical to success and can be prevented by cleanliness, hemostasis and avoidance of chemical irritants and drainage-tubes.

3. Chromicized catgut and fine silk furnish the best suture material. The single transfixion stitch should be of catgut and the two or more perineurotic stitches, of fine silk.

4. Tension may be overcome by position and loss of substance by nerve stretching and bridging by the flap method.

5. Immediate suture of clean nerve ends accurately approximated is conducive to early functional restoration.

6. Relaxation by position, rest and protection by suitable splint are conducive to successful union.

7. Cicatricial compression may be anticipated and the nerve placed out of harm's way.

8. Asepsis in primary, and antisepsis and asepsis in secondary nerve suture should be the practice of to-day. Antiseptics have an irritative and destructive effect

beneath the integument, cause inflammation and render drainage necessary.

BIBLIOGRAPHY.

Jencken, F. J.: British M. J., 1887, ii, p. 127. Suture of divided ulnar nerve after six months.

Harrison, R.: British M. J., 1886, i, p. 443. Wound of wrist with division of median and ulnar nerves, etc.

Scott, J. H.: Nerve Suture. Lancet, 1887, i, p. 1091.

Hulke: Sutural Union of the Median Nerve. Lancet, 1880, i, p. 288.

Ogston, A.: Suture of the Ulnar Nerve. British M. J., 1881, i, p. 391.

Hulke: Sutural Junction of Ulnar Nerve, etc. British M. J., 1879, i, p. 319.

Shepherd, F. J.: Secondary Rupture of the Ulnar Nerve, with Rapid Restoration of Sensation. Canada M. and S. J., 1886-7, xv, p. 350.

Surmay: Résection et Suture du Nerf Médian, etc. Arch. Gén. de Méd., 1885, xvi, p. 483.

Tillaux: Suture Secondaire du nerf Médian. Bull. et Mem. d. l. Soc. de Chir. de Paris, 1887, xiii, p. 193.

Bland, Sutton J.: Suture of the Median Nerve. Lancet, 1887, i, p. 124.

Tillaux: Sur deux cas de Suture Secondaire du Nerf Médian, etc. Gaz. d. Hôp., 1884, lvii, p. 595.

Bouisson: Suture du Nerf Médian. Bull. et Mém. d. l. Soc. de Chir. de Paris, 1886, xii, p. 933.

Schwartz: Suture du Nerf Médian. Bull. et Mém. d. l. Soc. de Chir., de Paris, p. 942.

Polaillon: Suture Secondaire du Médian. Bull. et Mém. d. l. Soc. de Chir. de Paris, 1887, xiii, p. 339.

Page, H. W.: Case of Secondary Suture of Ulnar Nerve, etc. British M. J., 1883, i, p. 1223; Immèdiate Suture of Divided Nerves, British M. J., 1881, i, p. 717.

MacCormac, Sir W.: On Some Cases of Neuropathy or Nerve Suture. St. Thomas' Hosp. Reports, 1885, xv, p. 45.

Langton, J.: Operation for the Union of a Divided Ulnar Nerve. St. Bartholomew's Hosp. Reports, 1881, xvii, p. 192.

Langier: Note sur la suture du Nerf Médian. Gaz. d. Hôp., 1864, xxxvii, p. 358.

Markoe, T. M.: Secondary Nerve Suture. N. Y. Med. J., 1885, xii, p. 295.

Curtis, B. F.: Suture of Median Nerve. Jour. N. and M. Dis., 1898, xxv, p. 479.

Editorial: De la Suture des Nerfs à Distance. Gaz. Hebd. de Med. et de Chir., 1897, ii, p. 124.

Ochsner, A. J.: Nerve Suture and Other Operations for Injuries to the Nerves of the Upper Extremities. Internat. J. of Surg., 1896, ix, p. 352.

Huber, G. C.: Nerve Suturing and Nerve Implantation. Internat. Jour. Surg., 1897, x, p. 41; Transact. Mich. Med. Soc., 1896, p. 56.

Bowlby, A. A.: Injuries of Nerves, Lancet, 1887, i, 863, 922; ii, pp. 53, 99.

Albrecht, J.: Nervennaht. Deutsche Zeit. f. Chir., 1887, xxvi, p. 430.

Ashhurst, J.: Secondary Suture of the Median Nerve, etc. Univ. Med. Mag., 1889-1890, ii, p. 202.

Reclus: Nerve Suture. Bull. Méd., 1887, i. June 5; Ann. Surg., 1887, vi, p. 339.

Bank, Jos.: Ueber die Enderfolge der Nervennaht. Inaug. Diss., Kiel, 1893.

PATHOLOGICAL CONDITIONS FOUND IN MEAT INSPECTION.*

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The more common and important pathological conditions found in meat inspection are no doubt subjects of considerable interest to the members of this Association. These conditions may affect the public health to a certain extent, and they are unquestionably worthy of careful study by the sanitarian as well as the pathologist.

The federal meat-inspection service having been in operation about nine years, has now reached a stage of development and an approach to uniformity of procedure which justifies the expectation that some thought may hereafter be given to the utilization for scientific purposes of its records and of some of the material which is found. While we have not in the past entirely neglected the collection and study of the pathological material, the imperative necessity of organization and of the investigation and control of the more destructive animal plagues has prevented us from using this material to any great extent either for illustrative purposes or for scientific study.

The specimens which are exhibited here are nearly all in a fresh condition and have been preserved by freezing. They are only such as could be collected in a comparatively short time, but they are of special value as showing the natural appearance of the affected meat. To give some idea of the frequency or infrequency of disease in our meat-producing animals, I have taken from our reports some statistics covering the two fiscal years beginning July 1, 1897, and ending June 30, 1899. These statistics are especially valuable on account of the large number of carcasses inspected during that period, and refer entirely to the post-mortem examination.

During the two years mentioned, the number of cattle examined reached a total of 8,831,927. Of these cattle 19,454 entire carcasses and parts of 23,106 additional carcasses were condemned. This means that 22 carcasses in 10,000 were entirely condemned, and that 26 carcasses in 10,000 were partly condemned, making a total of 48 carcasses in 10,000 condemned in whole or in part. Of the 23,106 carcasses parts of which were condemned, 12,641 were affected by bruises or injuries; 7,120 by abscesses; 3,025 by localized actinomycosis; 268 by localized tuberculosis; 11 by tumors; 6 by hydatids and the remainder by circumscribed inflammation of various organs. Of the 19,454 carcasses which were wholly condemned 7015 were affected with tuberculosis; 5172 by actinomycosis; 2530 by anemia, emaciation, etc.; 2227 by bruises and injuries; 598 by septicemia; 384 by pneumonia; 268 by peritonitis; 222 by pyemia; 212 by icterus; 205 by abscesses; 166 by Texas fever; 95 by advanced pregnancy; 90 by enteritis; 44 by cancer; 42 by gangrene; 24 by metritis; 15 by recent parturition; 1 by anthrax, and the remainder—144—mostly by tumors and inflammations of the various organs.

The number of sheep inspected during this period reached 11,110,776. Of these sheep, 8394 carcasses, or 7.5 per 10,000 were wholly condemned and 650 carcasses, or 0.6 per 10,000, were condemned in part. Taking the carcasses of which only parts were condemned and 379, or more than one-half, were affected by bruises and injuries; 132 by abscesses; 91 by hydatids, 41 by the esophagostoma columbianum, the parasite causing the nodular disease of the intestines, 4 by scabies and 3 by tuberculosis. Of the 8394 entire carcasses of mutton condemned, 2345 were affected with anemia and emaciation; 1696 by bruises and injuries; 667 by tuberculosis and pseudo-tuberculosis; 550 by abscesses; 464 by pneumonia; 422 by uremia; 371 by septicemia; 370 by icterus; 256 by pyemia; 204 by pleurisy; 171 by ascites; 154 by scabies; 131 by advanced pregnancy; 118 by hydatids—echinococcus—and the remainder—375—mostly by inflammation of various organs, fever, recent parturition, parasites, tumors and cancer.

The number of hogs slaughtered under inspection during the same period was 44,841,779. Of these hogs 106,555 carcasses were wholly condemned, being about 24 per 10,000, and 58,491, or 13 per 10,000, were condemned in part. Of the carcasses only partially condemned 37,167 were affected by bruises or injuries; 7853 by tumors; 7338 by abscesses; 1971 by hydatids; 1683 by tuberculosis; 1313 by mammitis; 1119 by pleurisy and 47 by actinomycosis. Of the carcasses wholly condemned 85,904 were affected by hog cholera and swine plague; 4021 by tuberculosis; 2298 by icterus; 2065 by pyemia; 1847 by abscesses; 1709 by pneumonia; 1570 by advanced pregnancy; 1463 by septicemia; 1294 by bruises and injuries; 1099 by tumors; 1500 by inflammation of organs in the abdominal cavity; 536 by anemia and emaciation; 321 by recent parturition; 267 by fever; 113 by scabies; 43 by actinomycosis; 60 by cysticercus cellulosæ or measles of swine; 23 by hydatids; 9 by cancer. The remaining 313 were for the most part affected by skin diseases, gangrene and inflammation of various organs. There has not been included in this statement the condemnations for trichinæ infestation, since pork for the domestic markets is not examined microscopically.

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*Presented to the Section on Pathology, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

The proportion of condemnations for the different varieties of animals per 10,000 slaughtered is shown by the following table:

	Cattle.	Sheep.	Swine.
Whole carcasses, per 10,000........	22	7.5	24
Parts of carcasses, per 10,000......	26	0.6	13
	—	—	—
Total	48	8.1	37

In general terms it may be said that the proportion of condemnations with cattle and swine correspond quite closely, while with sheep it drops almost to one-fifth of the figures for swine and one-sixth of those for cattle. The relatively large number of condemnations with cattle is somewhat surprising since they are generally considered the most hardy and healthy of our domesticated animals. An examination of the causes of condemnation shows, however, that more than half of the parts of carcasses rejected were affected by injuries received in shipment, while almost one-third were condemned for abscesses, many of which no doubt were also due to mechanical injuries. That is, cattle, on account of their size, weight and combative disposition are particularly liable to injuries which may require the removal of a part of the carcass. Making allowance for such injuries, the condemnations with cattle will be no greater than with swine. The small proportion of condemnations with sheep is remarkable, particularly when we consider the delicacy of their constitution and their feeble powers of resistance to unfavorable conditions.

When we examine into the causes of condemnations with cattle we are impressed by the relative number due to actinomycosis and tuberculosis. Of the whole carcasses condemned, 26 per cent. were affected with actinomycosis and 36 per cent. with tuberculosis. Of the parts of carcasses condemned, 13 per cent. were affected with actinomycosis and 1 per cent. with tuberculosis. Nevertheless, there is a surprisingly small proportion of the beef-producing cattle, as they come to our large abattoirs, which are affected with these diseases. Taking the total condemnations of whole carcasses and parts of carcasses for tuberculosis, we find but 8.1 per 10,000 animals; and in the same manner, with actinomycosis we find 9.2 per 10,000 animals. Actinomycosis, also, affects hogs and sheep, but much more rarely than cattle. Thus with hogs, 43 whole carcasses and 47 parts of carcasses were condemned for this disease out of 44,841,779 carcasses inspected; that is something over two affected carcasses to a million. This does not give an accurate idea of the frequency of actinomycosis with hogs, however, as many of the tumors for which condemnations were made were undoubtedly actinomycotic growths. In sheep two whole carcasses were condemned for actinomycosis out of 11,110,776. Tuberculosis is one of the principal diseases found in swine, though it is far less common than with cattle. Adding together the number of whole carcasses and parts of carcasses condemned we find that approximately 1.3 hogs per 10,000 are affected. Tuberculosis in sheep is a very rare disease. Our reports give tuberculosis and pseudo-tuberculosis together, the latter being much the more common. Including both, however, there are specified but 6 per 100,000 sheep inspected. It is quite probable that some of the abscesses reported were due to pseudo-tuberculosis.

Tuberculosis in cattle is generally a localized disease. It affects most frequently the bronchial and mediastinal lymph-glands and lungs, but very often the abdominal lymph-glands, liver or spleen are invaded. Sometimes it is generalized and tubercles are found widely distributed, affecting even the muscles and bones. Some statistics show the uterus involved in about 10 per cent. of the tuberculous cows and the udder in 1 or 2 per cent.

Our inspectors are instructed to condemn: 1, all carcasses affected with generalized tuberculosis; 2, all carcasses with extensive localized tuberculosis, and 3, all carcasses with localized tuberculosis that show signs of emaciation. This ruling is considerably more stringent than the European practice, which allows carcasses affected with localized tuberculosis to go on the market without regard to the extent of the lesions, except in case of marked emaciation. Even generalized tuberculosis is not always considered, in other countries, a sufficient cause for condemnation, and those carcasses in which the lesions are apparently confined to the organs of the body cavities, especially if the process of generalization has not been recent, are passed as fit for food.

The beef cattle which come to our large abattoirs are singularly free from tuberculosis, since only one animal in 1500 or 2000 is affected to an extent which causes the condemnation of any part of the carcass. Dairy cattle, however, are much more seriously affected, and from 5 to 10 per cent. may be found tuberculous. In European countries the tuberculosis of cattle is much more frequent than in the United States, the slaughterhouse statistics showing from 20 to 50 per cent. of all such animals to be affected.

There is a possibility of fetal infection in bovine tuberculosis, but such cases are quite rare. The congenital form of tuberculosis exists in probably less than 1 per cent. of the calves born of tuberculous mothers. The tuberculosis of calves arises from virulent milk used as food rather than from infection in utero. The specimens of tuberculous udders illustrate the appearance of the affected gland, and also the possibility of large quantities of virulent material finding its way into the milk. The milk should be considered dangerous in all cases in which the disease has invaded the udder, and it may also be infectious in advanced cases of tuberculosis although no lesions can be discovered in the udder.

There is not time on this occasion to discuss the transmission of bovine tuberculosis to man. I believe that such transmission occurs and that precautions should be taken to guard against it. The frequency with which tuberculosis is communicated from animals to man can only be determined by the long-continued, careful and concerted observation of physicians. The data which we now have is meager and much of it is unsatisfactory. It consists of accidental inoculations and of primary tuberculosis of the intestines or mesenteric glands. In the former case the origin of the lesion is generally very clear; in the latter we can only infer that the bacilli were introduced with the food. When the death of a number of persons in the same institution —school, asylum—occurs from abdominal tuberculosis and the cows furnishing the milk are found to have their udders affected with the disease, and to be producing virulent milk, the evidence of transmission is about as strong as we can expect to obtain. Unfortunately, sufficient attention has not been given to such observations in this or in other countries, so far as I am aware. Careful post-mortem examinations of children which die in asylums and hospitals should in time furnish most valuable evidence.

As an example of what the speaker has in mind, he would refer to an article by Dr. George F. Still, M.A., M.D., M.R.C.P.[1] This communication gives the results of 769 consecutive autopsies on children, all being hospital patients. Of these, 269 presented lesions of tuberculosis. As far as could be ascertained, 53 were infected by way of the intestine, and 10 others were probably infected through this channel. That is, 63 out of 269, or 23.4 per cent., probably contracted the disease by infection taken with the food. There were 43 cases in which death occurred from some other cause than tuberculosis; and these cases were noted as furnishing almost indisputable evidence of the method of infection in each individual case, since the tuberculous disease had either been arrested in its early stages or had not yet progressed beyond the initial stage. With these cases the evidence as to primary focus of infection was as follows: Lung, 26; intestine, 16; ear, 1. That is, where the evidence was most clear, the infection was by the digestive tract in 37.2 per cent. of the cases. It is a pity that we have not enough evidence of this character from the principal countries to enable us to form an intelligent opinion as to the relation, if any, which exists between the frequency of tuberculosis in the food-producing animals, and that of abdominal tuberculosis in mankind.

Although tuberculosis is less common in swine than in cattle it has a greater tendency to generalization and affected carcasses need to be very carefully scrutinized before they are passed as fit for food.

The specimens showing the tuberculous lesions in cattle and hogs will be found most interesting, particularly those from the udder of the cow and those illustrating the generalized form of the disease in swine.

The pseudo-tuberculosis of sheep is a very interesting disease, generally found among animals which have originated in the southwestern section of the United States, from Texas to California inclusive. It is generally observed in mature animals, though it is occasionally found in lambs. The lymphatic glands, lungs and liver are the parts oftenest affected. One or more of the prescapular, inguinal, sublumbar, mediastinal or bronchial glands may be found enlarged and on pressure gives a sensation such as would be expected from a thick-walled sac containing semi-fluid material. On section the contents are found to be yellowish green and caseous, while the capsule is grayish-white, fibrous and firm. Sometimes the caseous substance closely resembles the contents of softened tubercles, but in older lesions it has a greater consistency, finally becoming dry and mealy. As a rule, these lesions do not present evidence of calcification. The lesions in the lungs, liver and other organs have a similar appearance. They are well defined and surrounded by a wall of fibrous tissue.

Microscopic examination of cover-glass preparations made from the caseous material and stained by Gram's method demonstrates the presence of a small, ovoid bacillus. It develops on agar in the course of forty-eight hours as an irregular, whitish colony, with crenated border and papillated center. In bouillon turbidity occurs in thirty-six hours and in forty-eight hours a heavy, white granular precipitate forms at the bottom of the tube.

Intravenous inoculations of rabbits and guinea-pigs cause death in six to ten days with cheesy foci of varying size in the lungs, liver and spleen. Subcutaneous inoculations cause death in these animals in twenty-five to thirty days, with caseous degeneration of the tissues near the point of inoculation and lesions of the neighboring lymphatics. Feeding experiments with these small animals produce fatal results in eight to ten weeks, the lesions being identical with those caused by intravenous inoculation, except that the lymphatic glands of the head and throat are more frequently involved. Feeding experiments with sheep have given negative results. Intravenous inoculation of sheep with material from the caseous lymphatic glands of diseased animals have produced in the course of eight weeks only small caseous foci, the size of a hazelnut, in the lungs.

Another interesting disease, of which specimens are shown, is the nodular disease of the sheep's intestine. These nodules, which have often been regarded as of tubercular nature, are really due to the irritation caused by the immature form of an intestinal worm—the esophagostoma columbianum. This is a very common disease and apparently only affects the sheep's health when the nodules are so numerous as to interfere with the assimilation of the food. In some parts of the country the esophagostoma is a great pest and multiplies so rapidly that it is practically impossible to keep sheep successfully in large flocks.

The frequency with which hogs are found affected with cholera and swine plague is indicated by the fact that of 106,555 carcasses condemned, 85,904, or 80.7 per cent., were rejected for this cause. It is therefore important that inspectors should be familiar with the appearances of meat affected with this disease.

Your attention is invited to the lesions of actinomycosis in the jaw, tongue, liver, lungs and udder. The actinomycotic process is most frequently seen in this country affecting the maxillary bones, where it causes a large, hard suppurating tumor which disfigures the animal and gives it a very unprepossessing appearance. The tongue is often affected, becoming enlarged, hard and filled with nodules containing caseous material. Actinomycotic tumors may be found in the pharynx, larynx and esophagus. Lesions resembling those of tuberculosis are found in the lungs, liver and peritoneum. In general, it may be said that the actinomycotic lesion develops either with a tubercular appearance, or as a soft, moist, reddish tumor, or, finally, as a hard fibrous tumor. There is a tendency to disintegration and suppuration and sometimes the lesion consists simply of an abscess. The presence of the actinomyces tufts constitutes a reliable means of diagnosis.

The repulsive appearance of animals affected with actinomycosis of the head has inclined some sanitarians to give undue attention to this disease to the neglect of others having a greater effect on the flesh and that are more dangerous to the consumer. As this disease is probably not transmitted from animals to man the car-

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[1] British Med. Jour., Aug. 19, 1899, p. 455.

and swine plague; 4021 by tuberculosis; 2298 by icterus; 2065 by pyemia; 1847 by abscesses; 1709 by pneumonia; 1570 by advanced pregnancy; 1463 by septicemia; 1294 by bruises and injuries; 1099 by tumors; 1500 by inflammation of organs in the abdominal cavity; 536 by anemia and emaciation; 321 by recent parturition; 267 by fever; 113 by scabies; 43 by actinomycosis; 60 by cysticercus cellulosæ or measles of swine; 23 by hydatids; 9 by cancer. The remaining 313 were for the most part affected by skin diseases, gangrene and inflammation of various organs. There has not been included in this statement the condemnations for trichinæ infestation, since pork for the domestic markets is not examined microscopically.

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The pseudo-tuberculosis of sheep is a very interesting disease, generally found among animals which have originated in the southwestern section of the United States, from Texas to California inclusive. It is generally observed in mature animals, though it is occasionally found in lambs. The lymphatic glands, lungs and liver are the parts oftenest affected. One or more of the prescapular, inguinal, sublumbar, mediastinal or bronchial glands may be found enlarged and on pressure gives a sensation such as would be expected from a thick-walled sac containing semi-fluid material. On section the contents are found to be yellowish green and caseous, while the capsule is grayish-white, fibrous and firm. Sometimes the caseous substance closely resembles the contents of softened tubercles, but in older lesions it has a greater consistency, finally becoming dry and mealy. As a rule, these lesions do not present evidence of calcification. The lesions in the lungs, liver and other organs have a similar appearance. They are well defined and surrounded by a wall of fibrous tissue.

Microscopic examination of cover-glass preparations made from the caseous material and stained by Gram's method demonstrates the presence of a small, ovoid bacillus. It develops on agar in the course of forty-eight hours as an irregular, whitish colony, with crenated border and papillated center. In bouillon turbidity occurs in thirty-six hours and in forty-eight hours a heavy, white granular precipitate forms at the bottom of the tube.

Intravenous inoculations of rabbits and guinea-pigs cause death in six to ten days with cheesy foci of varying size in the lungs, liver and spleen. Subcutaneous inoculations cause death in these animals in twenty-five to thirty days, with caseous degeneration of the tissues near the point of inoculation and lesions of the neighboring lymphatics. Feeding experiments with these small animals produce fatal results in eight to ten weeks, the lesions being identical with those caused by intravenous inoculation, except that the lymphatic glands of the head and throat are more frequently involved. Feeding experiments with sheep have given negative results. Intravenous inoculation of sheep with material from the caseous lymphatic glands of diseased animals have produced in the course of eight weeks only small caseous foci, the size of a hazelnut, in the lungs.

Another interesting disease, of which specimens are shown, is the nodular disease of the sheep's intestine. These nodules, which have often been regarded as of tubercular nature, are really due to the irritation caused by the immature form of an intestinal worm—the esophagostoma columbianum. This is a very common disease and apparently only affects the sheep's health when the nodules are so numerous as to interfere with the assimilation of the food. In some parts of the country the esophagostoma is a great pest and multiplies so rapidly that it is practically impossible to keep sheep successfully in large flocks.

The frequency with which hogs are found affected with cholera and swine plague is indicated by the fact that of 106,555 carcasses condemned, 85,904, or 80.7 per cent., were rejected for this cause. It is therefore important that inspectors should be familiar with the appearances of meat affected with this disease.

Your attention is invited to the lesions of actinomycosis in the jaw, tongue, liver, lungs and udder. The actinomycotic process is most frequently seen in this country affecting the maxillary bones, where it causes a large, hard suppurating tumor which disfigures the animal and gives it a very unprepossessing appearance. The tongue is often affected, becoming enlarged, hard and filled with nodules containing caseous material. Actinomycotic tumors may be found in the pharynx, larynx and esophagus. Lesions resembling those of tuberculosis are found in the lungs, liver and peritoneum. In general, it may be said that the actinomycotic lesion develops either with a tubercular appearance, or as a soft, moist, reddish tumor, or, finally, as a hard fibrous tumor. There is a tendency to disintegration and suppuration and sometimes the lesion consists simply of an abscess. The presence of the actinomyces tufts constitutes a reliable means of diagnosis.

The repulsive appearance of animals affected with actinomycosis of the head has inclined some sanitarians to give undue attention to this disease to the neglect of others having a greater effect on the flesh and that are more dangerous to the consumer. As this disease is probably not transmitted from animals to man the carcasses are only condemned when there is emaciation or when the lesions are so large, active or disseminated as to affect the system at large.

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[1] British Med. Jour., Aug. 19, 1899, p. 455.

Perhaps I should explain, that while in some countries, possibly in most countries, the meat inspectors condemn only such meat as they believe to be clearly injurious to consumers, we go somewhat farther in this country and condemn much meat which is not actually injurious, but which for various reasons is repugnant. In this class may be placed the carcasses of animals advanced in pregnancy, or those which have recently given birth to their young; the unborn fetus and the very young calf or lamb; the carcasses of animals suffering from pneumonia, pleurisy or some other non-infectious disease; the greater part of the actinomycotic carcasses and of those affected with extensive though localized tuberculosis. On the same principle we destroyed the carcasses of all cattle affected with contagious pleuropneumonia when we were engaged in the work of eradicating that disease, although it had been proved by European experience that the flesh of these animals might be consumed with impunity.

Turning now to the animal parasites which are encountered on the slaughtering floor, it may be observed that the subject of meat inspection for these organisms bears both a direct and an indirect relation to public health, for we find parasites, some of which are transmissible directly to man through the meat eaten as food, while others are transmissible indirectly, first passing a stage of their life in some other host. Among those which are transmissible directly to man, your attention is especially invited to the larval stages of tape-worms. Cystericus bovis occurs in cattle and when eaten by man gives rise to the common tapeworm found in this country, tænia saginata by name. The specimen exhibited is a cross-section through the tongue of a calf, and these bladder-like structures more or less resembling particles of fat represent the larval worm. This particular tape-worm is not an especially dangerous parasite. It may bring about digestive troubles, and it is occasionally very difficult to expel it, but, as a rule, we may say that the parasite is only of temporary importance, its effects passing off when the worm is expelled. With this specimen, the matter is entirely different. This is the so-called "measle tape-worm," tænia solium, and is contracted by swallowing the larval bladder worm, cystericus cellulosæ by name, which occurs in pork. Owing to the fact that Americans are in the habit of cooking or curing pork quite thoroughly before consuming it, the larval stage is usually killed, hence the adult parasite tænia solium in man is rather infrequent in this country. It will, however, be found among Germans and others who are in the habit of eating raw or rare pork. Sometimes, perhaps, physicians do not attempt to distinguish between cases of infection among their patients by the two worms just mentioned. The fact should not be lost sight of, however, that the tænia solium is a very much more dangerous parasite than tænia saginata, for if a patient soils his hands with the microscopic eggs during defecation or if he has reverse peristalsis of the intestine strong enough to carry one or more segments of the tape-worm into the stomach, he infects himself with the larval stage. In this case the embryos escape from the segments into the stomach and wander to various parts of the body, more especially to the muscles, the eyes and the brain. If one of the larvæ develops in the eye, more or less serious conditions may result, while if they develop in the brain, they may lead to serious complications, according to the part of the brain in which they grow, and may finally result in death. Again, it may not be amiss to remind physicians that, in treating for tape-worms, they constantly stand in danger of infecting themselves with the larval stage, if they handle the tænia solium, a danger which does not exist in connection with tænia saginata. The existence of these two parasites in our American cattle and hogs, leads me to suggest that the practicing physician has a duty to perform in seeing that all tape-worms passed by his patients, are totally destroyed, unless preserved for scientific work. It too often happens that the patient is not properly instructed in this matter and passes the worm in some place where the eggs are scattered so that they afterward infect cattle and hogs.

The meat inspection in Germany has resulted in decreasing the frequency of tape-worm disease in man, as well as the infection with the larval stage of cysticercus cellulosæ. We have no exact statistics on this subject for the United States, but it would appear that the federal meat inspection system must necessarily contribute its share to the decrease of tape-worm disease. If physicians will do their part in burning the tape-worms passed by their patients, there is no reason why we should not gradually eradicate these two parasites from the country.

Another parasite transmissible directly to man by means of the meat, is the well-known trichina spiralis, the cause of the disease trichinosis. Fortunately, our curing and culinary methods are a great protection against infection with this worm. We do not make an inspection with a view of excluding this parasite from the pork which is consumed in this country. It would cost us nearly three million dollars per annum to accomplish this, and the statistics of Germany show beyond a question that a microscopic examination is not of such great value as is generally supposed. The Bureau of Animal Industry has recently compiled over fourteen thousand cases of trichinosis in Germany from 1860 till 1898, inclusive, and from our compilation it results that the general mortality of the disease is 5.6 per cent. Of over six thousand cases which occurred during the years 1881 till 1898, inclusive, about 51 per cent. of all the cases were due to faults in the microscopic inspection, the vast majority of these occurring from meat which had been inspected and passed as free from trichinæ. One is scarcely warranted in recommending that this Government expend three million dollars per annum for the general introduction of a sanitary inspection which the German statistics prove to be so uncertain, an inspection which is calculated to raise a false sense of security among our people, and which might tend to increase the dangerous custom of eating raw or rare pork. Trichinosis may be prevented much more effectually by educating the public to the use of thoroughly cured pork and to the idea that when it is not thoroughly cured, it should, at least, be thoroughly cooked.

Finally, I invite your special attention to an animal parasite which is apparently on the increase in this country. I refer to the echinococcus, the cause of the hydatid disease. This bladder-worm may be found in almost any part of the body of the meat-producing animals, and especially in the lungs and liver of cattle, sheep and swine. You will pardon me, I trust, for recalling some points in its life history which are no doubt familiar to you. If a man were to eat an affected organ, it would do him no harm, for the parasite is not directly transmissible from these animals to man. If, however. the hydatid worm is fed to a dog, each separate head of the cyst, and there may be thousands in a single cyst, develops into a tape-worm. It is probably the smallest tape-worm known, having very few segments, and only the last segment is gravid with eggs. The dog scatters the eggs of this tape-worm broadcast and the domesticated animals become infected with it. Mankind may also become infected with this parasite by a too close intimacy with dogs. In Iceland where men and dogs live during the long months of winter in the same huts and without any idea of sanitary precautions, it is said that one person out of 43 is affected with the echinococcus disease. In some parts of Germany the disease is also very frequent. Ostertag gives a table from which it appears that at Rostock out of 1026 post-mortems on man 25 cases were found, or 2.43 per cent.; at Breslau out of 1360 post-mortems there were 20 cases, or 1.47 per cent.; at Berlin out of 4770 post-mortems there were 33 cases or 0.76 per cent. It is also alleged to be common in Siberia, India and Australia. The disease can only be controlled by careful meat inspection and the destruction of all hydatids that are found. Unfortunately the local slaughter-houses of this country are not looked after so closely as they should be. It is often an easy matter for dogs to gain access to such premises and to become infected with this parasite and thus propagate the infection. To prevent this and other diseases there should be expert supervision over all slaughter-houses. Places for slaughtering should be reduced in number so that all the butchers of a town or village would slaughter at the same place and the premises where slaughtering is done should be under the surveillance of the local board of health. Offal feeding should be done away with in order to prevent the propagation of this class of parasites, and under no circumstances should a dog ever be allowed on the premises.

I trust this brief and somewhat superficial review of the subject of meat inspection, and the exhibition of specimens, may serve to increase the interest of physicians in this branch of sanitary work. It is only through the examination of the pathological specimens actually found by the meat inspectors that we are able to appreciate the importance of having experienced and educated men on guard to withdraw carcasses so affected from the meat-supply of the country. The great mass of our citizens have no conception either of the diseases found among animals at the abattoirs, or of the enormous amount of work which our government is doing to protect them from diseased animal products.

No public work, however, can long be sustained or carried to the highest degree of efficiency unless the people of the country understand its objects and value and become interested in it. This being true as a general proposition, we can hardly expect the meat-inspection service, interfering as it must more or less with some of the wealthiest and most powerful industrial organizations in the world, to be conducted with vigor and a rigid adherence to correct principles, unless there is a popular appreciation of the value of the work to every consumer of meats. This service must appeal first of all to the physician, who, being familiar with pathological appearances, can by inspecting these specimens judge of their seriousness and their influence on the public health.

Non-alcoholic insanity is decreasing in Scotland, while alcoholic insanity is increasing, according to the past year's records of the Edinburgh Asylum for the Insane.

THE TREATMENT OF PROLAPSE OF THE RECTUM.*

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There is perhaps no pathologic condition which affects the rectum, that gives so much concern to the surgeon, as a serious prolapse. It is not to be understood that reference is had to the prolapse that occurs in infancy or to the milder forms met with in adult life. I have yet to see a prolapse of the rectum, incident to young life, that has not readily yielded to the following simple plan of treatment, viz.: Administration of a gentle purgative and, when it acts, the protruded gut is washed with cold water and returned. Then the physician in attendance straps together the two buttocks, bringing them in close apposition by means of adhesive plaster. This is allowed to remain on for four or five days, and the little patient is kept in bed and permitted to have only liquid nourishment. At the end of this time the adhesive strips are removed and the bowels allowed to move in response to a dose of castor-oil and an enema of cold water. The child should be allowed to have its action from the bowels while lying on the back. The adhesive plaster strips are then reapplied and the child put to bed for another five days—the purgative is again given, when it will be observed that the gut will no longer protrude if the proper attention is given the position of the patient during the action of defecation, which should be either in the erect one or reclining upon its back. The application of fuming nitric acid or other caustics should be deprecated in all such cases.

LINEAR CAUTERIZATION.

Linear cauterization is recommended by some, notably Van Buren, in his most excellent work on "Diseases of the Rectum." It was advised by him to use the actual cautery-iron in most all cases of prolapse of the rectum. The truth is that the remedy is too severe to use in simple cases, and is of no benefit in the graver ones. Its application would often result in hemorrhage if the iron is applied sufficiently hot to cause a slough, and unless a slough does occur, no benefit is derived from this mode of treatment.

AMPUTATION.

The former custom of cutting out an elliptical piece of the gut and drawing it together by sutures is so unsatisfactory in its results that it will not be discussed here. Amputation of the "prolapse" is, however, an operation advocated by a good many and should receive careful consideration. We must remember that it is often a difficult matter to tell just what kind of a prolapse is being dealt with. A prolapse of mucous membrane alone can be amputated and tied off, just as hemorrhoids are treated. But to cut off a more serious prolapse, means the opening of or the wounding of the peritoneum with perhaps dangerous complications, not to speak of subsequent contraction as the result of the amputation. This phase of the subject has been carefuly considered by modern operators, and I beg to call attention to a recent report of such a case by Dr. George Ryerson Fowler[1] of New York. He says:

> In a case of large rectal prolapse recently under my care at the Brooklyn Hospital, the following method of carrying out the procedure of amputation of the prolapse proved to be comparatively easy of performance, and was followed by a most excellent result. The patient was a male in whom the

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* Read before the Chicago Medical Society by invitation.

[1] Med. News, Dec. 8, 1900.

mass protruded about five inches, and had been in existence for five years.

Analgesia was effected by means of spinal cocainization. The patient was placed in the combined lithotomy and Trendelenburg position. Being fully conscious, he was able to bear down forcibly and extrude the prolapse fully, thus doing away with the necessity for traction upon the latter. A row of fenestrated or ring-headed forceps (common artery clamps will answer, but do not hold so well) was placed just in front of the junction of the mucous membrane with the skin of the anus in such a manner as to pinch up a circular fold of the mucous membrane of the outer cylinder for the entire circumference of the gut. About half an inch in front of this again an incision was made, likewise for the entire circumference of the outer cylinder of the gut, this incision extending through the mucous membrane only. Its proximal edge was dissected back for a half-inch. Two clamps were now placed, one upon either side, at the point of the prolapse, or the place where the outer cylinder of the gut returns to form the inner cylinder. With the mass thus steadied and the two cylinders identified, the index finger of the left hand was passed up the inner cylinder, and with this as a guide the cylinder incision already made in the circumference of the outer cylinder was deepened to the extent of a half inch so as to include the remainder of the thickness of the latter and the inner cylinder through its entire thickness to the finger inside the latter. A suture of catgut was now placed so as to include the entire thickness of the two cylinders where the half-inch opening was made, with the exception of the turned-back mucous membrane cuff at the anal mucocutaneous margin grasped at first by the fenestrated forceps. This step of the operation was repeated until the entire circumference of the cylinders was transversed, save that each subsequent suture was first applied and the incision extended afterward. Care was taken that each extension of the incision was carried no farther than the area previously secured by the suture. Throughout this portion of the operation a stream of warm borosalicylic (Thiersch) solution was kept playing upon the parts. When the posterior portion of the circumference was reached the mesenteric attachment of the gut was encountered. This was treated precisely as the interior portion, no difficulty being encountered in securing the vessels of the mesentery in the suture. As the last suture was applied the final cut was made in front of it, completing the amputation of the prolapse. The dissected-back mucous membrane at the mucocutaneous margin, which up to this time had been held in the grasp of the forceps first applied, was now replaced and sutured in position over the first rows of sutures. Alcohol-boiled catgut was used as suture material throughout the entire operation. The patient suffered not the slightest pain during the entire operation, nor inconvenience either then or thereafter from the spinal cocainization, save slight nausea and mild headache.

An opium suppository was placed high up in the bowel, and the parts replaced. A light tampon of zinc oxid gauze was placed in position for forty-eight hours, after which it was removed and a castor-oil cathartic given, followed in three hours by a sweet-oil enema.

The advantage of this method consists: 1, in the use of the combined lithotomy and Trendelenburg position, in order to prevent the descent of the small intestines during the operation, and thus providing against injury to these during the suturing; 2, in *turning back a cuff* at the mucocutaneous margin for the purpose of preserving the normal conditions at the rectal outlet, and at the same time permitting the removal of all the relaxed and overstretched mucous and submucous structures at this point. This cuff also provides a covering for the sutured edges of the stump of the prolapse and diminishes opportunities for subsequent infection; 3, in the step-by-step application of, first, a suture and then an extension of the incision through both cylinders to correspond with the sutured area, in this manner avoiding exposure of the peritoneal cavity to infection.

It is not claimed that this operation possesses all of these advantages exclusively. Several of them are features of one or another operation. I do not remember, however, to have seen them all combined in one procedure before.

Whereas Dr. Fowler does not claim that the operation is an original one in all its details, it does possess unique features and was attended by a brilliant result. However, there are some formidable objections that could be urged against it, but the scope of this paper will not permit. I have for many years been interested in the study of this affection, and have tried many if not all the plans of treatment for its cure, and must confess to disappointment in them all as a rule. The matter of curing a formidable prolapse of the rectum in the adult is no simple matter, and simple means will not avail. It was after several complete failures that I determined to try an original plan—at least so far as it was known to me—viz., to open the abdomen and anchor the colon or flexure for the cure of a long-standing prolapse of the rectum. Before reporting this case I desire to mention one reported by Dr. Chas. P. Noble,[2] of Philadelphia, who says:

> Marked prolapse and inversion of the rectum in adults is a condition which is well known for its intractable nature and for the difficulty of effecting a cure. It is not my purpose

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[2] Am. Gyn. and Obstet. Jour., December, 1900.

to discuss the etiology of the condition nor the treatment of the recent and more simple cases, which can often be cured by the removal of the cause, and careful attention to the regulation of the bowel movements. I desire to advocate a simple method of operation which promises well in the treatment of intractable cases, and to report two cases in which this operation has been performed. The operation which I would propose is to open the peritoneal cavity by an incision made through the left rectus muscle slightly below the promontory of the sacrum, to search for the sigmoid or for the rectum and to make traction upon it until it is inverted and until "the slack" has been taken up. The point at which the lower portion of the rectum will come in contact with the abdominal wall on slight tension should be determined, and this point attached to the abdominal wall by three or more fine silk sutures. The sutures should be passed so as to include a portion of the rectus muscle, and should pass under the anterior longitudinal band of the rectum. In this way the bowel can be firmly attached to the abdominal wall with the least danger of penetrating its lumen and with the greatest prospect of permanent attachment. The abdominal wall should then be closed by the tier method.

The history of the two cases is as follows:

Mrs. I., aged 35, primipara, consulted me March 21, 1899. She complained of backache and a feeling of discomfort about the rectum, which she attributed to piles. She stated that she had had piles for about five years and that these came down, and gave her a great deal of annoyance. The general examination threw no light upon the local trouble. Her health was otherwise good. Her bowels were obstinately constipated. Upon examination the supposed piles proved to be inverted rectum. Because of the unsatisfactory results which are usually obtained from the various direct operations upon the protruded bowel, I determined to perform a proctorrhaphy, which was done two days later. She made a prompt recovery, and was discharged from the hospital March 25. Her physician has told me within a month that the operation has effected a permanent cure. She is perfectly well, with the exception that there is some tendency to constipation, for which it is necessary to administer a laxative.

Miss D., aged 19, consulted me March 13, 1900, complaining of a sense of weight or bearing down about the rectum and intense backache. During each bowel movement there is an inversion of the rectum. For some time she has had but little control over her sphincter muscle. The present trouble began three years ago, after an attack of constipation, for which she took a powerful cathartic. Her bowels are constipated, but otherwise there is nothing in the history bearing upon the local trouble. Upon examination the sphincter was found in a paretic condition. In the Sims' position or in the knee-elbow position it dilated under atmospheric pressure, so that the rectum filled with air. Examination with the proctoscope showed a relaxed rectum, which was otherwise normal. On April 16 proctorrhaphy was performed. The patient made a good recovery and was discharged about five weeks after the operation. She consulted me in November, seven months after the operation, and reported that she had no trouble with her rectum until within a few weeks, since which time there has been some tendency to eversion of the bowel at stool. She is still constipated and has not taken her laxatives regularly. Upon examination, the anus was found in normal condition, the bowel in situ and, so far as an examination could show, the operation was entirely successful. As against this we have the statement of the patient that there is a tendency to recurrence of the old trouble. It is my judgment that reasonable care in the administration of laxatives and the use of enemata, so as to avoid constipation and straining, will be sufficient to effect a permanent cure.

When I operated on the first case, March 23, 1899, I was under the impression that the operation was original with myself. I have since learned that it has been done by Dr. W. Jos. Hearn, of Philadelphia, in one case with good result. Probably the first surgeon to perform this operation was McLeod, of Calcutta (B. K. McLeod, F.R.C.S.E.: "A New Operation for Prolapse of the Rectum," Lancet, vol. ii, p. 117, 1890). The technique which he employed, however, would not be likely to appeal to most surgeons. He introduced his hand into the rectum, reduced the inversion, put the rectum on the stretch from below upward, and pressed the rectum against the abdominal wall, endeavoring to press the small bowels to one side so that the rectal wall would come in contact with the abdominal wall. Two acu-pressure pins were introduced through the abdominal wall and through the rectum, penetrating its lumen, so as to fasten the rectum to the abdominal wall. These pins were separated by an interval of three inches, and they were so introduced that the rectum was made to take the course of running from below upward and from within outward. Having fixed the rectum to the abdominal wall, an incision was made between the pins down to, but not through, the parietal peritoneum. The hand was again introduced into the bowel as a guide, and fine sutures were introduced through the abdominal wall, and through the wall of the bowel, avoiding its mucous membrane, and then out through the opposite side of the wound. In this way the rectal wall was attached to the abdominal wall. The acu-pressure pins were removed after twenty-four hours. The patient made a fairly good recovery, the wound healing by first intention. The result was a cure.

It will be noticed that the cases reported by Dr. Noble were not types of prolapse even of the second degree, and in no way compare with the report of my case in severity of symptoms or extent of the affection.

On April 17, 1899, Mr. G. N. McL. was referred for operation, by his family physician. He gave the following statement of his case by request.

In February, 1865, while in camp and on line of duty at Fort Fisher, N. C., and on the marches through the state, I contracted a chronic diarrhea, which, with short intermissions, continued for many years, often confining me to bed. The prolapse commenced shortly after taking diarrhea and I was never entirely well of it afterward, but continued to get worse until, in 1875, when I quit all kinds of manual labor. From 1875 to 1885 I grew much worse, being much weaker and miserable. Diarrhea was bad by spells. From 1885 to 1895 diarrhea almost ceased, but the prolapse was much worse. From 1895 to 1899, diarrhea was less, prolapse much worse, though I was not confined to bed, but required a nurse most of the time. I was operated on April 17, 1899.

On examination it was found that the patient was suffering from an immense prolapse, in size about the measurement in circumference of a No. 7 Derby hat. (See photos.) It contained all the coats of the rectum, peritoneum, and in addition the bladder. In determining the method of operation, the fact of the presence of the bladder dissipated any idea of amputating the mass. When I made a statement of the formidable operation that might be required to effect a cure, he replied that life was a burden to him and that he would take any kind of a risk. After thorough preparation, he was placed under chloroform, and the bowel made to protrude to its fullest extent in order to examine it more fully. The thickness of its walls was truly amazing, and had the effect of making me doubt whether so heavy a mass could ever be held in place. An incision was made in the left inguinal region, extending upward about six inches. The hand of a competent assistant reduced the mass and was pushed with it up the rectum until the fingers could be felt in the sigmoid flexure by the operator. This procedure was found to be of wonderful assistance during the operation. The gut was now drawn taut and anchored to the abdominal muscular wall by a running suture of chromotized catgut for fully three inches. Simple anchoring by the interrupted suture would not have availed anything I am sure, in this case. The abdominal wound was closed, the patient put to bed, position on the back, with the foot of the bed elevated. He was kept in this position for two weeks, with watchful care. The bowels were moved on the fifth day by an aperient assisted by an enema. This was repeated in another five days. At the end of two weeks he was allowed to change position and recline on his side. The rectum was irrigated with a simple antiseptic solution every day. In the act of defecation, he was directed to always use the bed-pan during this time. At the expiration of a month his bowels moved on the commode without protrusion. I should state that after all the mass was pushed back, there was found to still protrude, mucous membrane about the size of a case of well-formed internal hemorrhoids. This proved fortunate, for by its simple ligation, a strictured condition resulted which was of great service at the anal orifice. It can be quite understood that the sphincter muscles were so distended by this great mass as to be nearly unrecognizable and without power of control.

The question naturally suggested was whether the muscle would ever regain its power and, if so, to what extent? Also, would this wonderfully thickened gut ever be thinned to assume or approximate the normal. I am glad to report that both conditions were eventually brought about. About one year after the operation was done I examined him, in company with Dr. Geo. J. Cook of Indianapolis, and found good contractile power in the sphincter, and the gut thinned to nearly a normal condition. On June 25, about two months after the operation, the patient wrote: "I have been using the water-closet, and there is no indication of the bowel coming down." He has continued to improve ever since and gained much in flesh. This case has never been reported.

I conclude: 1. That in all cases of prolapse of the rectum of the second or third degree, colopexia is to be preferred to all other procedures. 2. That it is the least dangerous of any surgical procedure advised for prolapse. 3. That the uninterrupted suture should be used in preference to the interrupted, especially in cases when the mass is large or the walls of the gut much thickened.

Mr Carlyon,[3] of London, says that he has only been able to find three cases of colopexia operations. He does not intimate for what degree of prolapse these were done. The operation referred to by me was done in April, 1899, and at that time I had never heard of its being done. Though, therefore, not original with me, I thought at the time that it was. No case that I have yet heard of compares in magnitude to this one, and I trust that by now reporting it, two years after the operation, the said report may prove of some benefit to those desiring to operate for so formidable a malady. In 1889, Jaennel fixed the colon to an artificial anus wound in the iliac region. Bryant found records of twenty-nine cases done by this method. In my opinion this procedure is not only unnecessary, but unjustifiable. Dr. Bovée, of Washington, reports an interesting case of colopexia done on a woman during an abdominal section after the ovaries and appendages had been removed.

In reporting this case I desire to thank my friend, Dr. Ap Morgan Vance for valuable assistance and suggestions.

SANITARY CONDITIONS OF PEKING.

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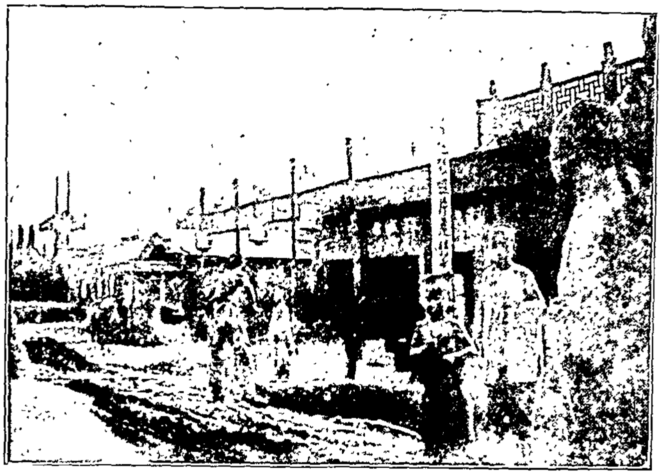
PEKING, CHINA.

The Chinese army has been driven from Peking, the Empress and her co-conspirators have fled, the order is cut for the punishment of the most guilty and the sacred city, we are told, is well patrolled by the foreign soldiers. All true, but those who have lived in Peking know that within a year, unless certain measures are taken, officers and men will discover a deadlier foe than the Empress Dowager's imperial troops, and the death-roll will be longer than it was after the taking of Fort Taku and Tien-Tsin.

Population.—The population of Peking is unknown, perhaps not being so great now as before the recent uprising, but still close to the one million mark. Some writers have greatly overestimated the number of inhabitants in this famous old city. Peking lies near the fortieth degree north latitude, ninety miles from the sea and one hundred and twenty feet above sea-level. It is surrounded to the north and west with mountainous hills, to the south lies the great plain of central China; the latter is sandy but well watered.

Climate.—The climate is similar to that of New York, but much more trying, especially during the spring and summer. From November until March the weather is cold, but March is windy there as elsewhere, and sand storms blow over the city; these are not only disagreeable, but dangerous. In April the temperature rises and in May reaches 90 to 95 degrees F. During May and June thunderstorms and rains are to be expected, and these are frequently the forerunners of an almost continual downpour which lasts from July to the early part of September. The annual rainfall[1] varies from 46 to 76 inches, but after the rainy season is over, with the exception of some very dusty days, the fall weather is delightful.



Street Sprinkler.

Water Supply.—A study of the sanitary conditions of Peking reveals much of a threatening nature and, if it teaches nothing new, throws indisputable proof in favor of our present ideas concerning the causation of disease. The city is without water-works, and has no sewerage system worthy of the name. The Chinaman believes in open sewers, claiming that it is better to leave the foul gases free than to pen them beneath the ground. But whether this is based on some scientific theory not yet explained, or ignorance of refuse disposal, I can not say, but am inclined to attribute it to ignorance. The water-supply is from wells dug along the sides of the streets; a heavy stone covers the well's mouth and the water is drawn in wooden buckets by rope and pulley; the presence of an open sewer ten feet away, or even running by the mouth of the well, in no way seems to militate against the site on which to sink a well. How often these wells are cleaned out it is impossible to learn, but it may be safely affirmed that they are cleaned only when enough dirt gathers in the bottom to interfere with the filling of the well. The water itself is

A Cesspool on one of the Main Streets.

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[3] The Lancet. December 1899.

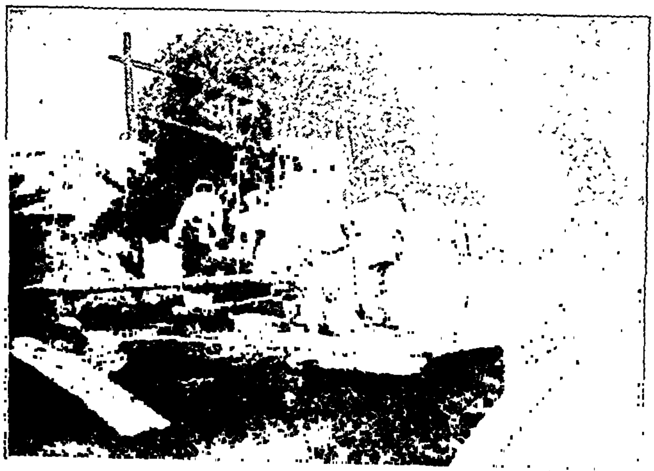
[1] There is no official record. This is the average for a number of years past, taken by different observers.

clear and of two varieties, known as "sweet" and "bitter" water. The latter is due to an excess of alkali containing 22 per cent. of hardness, as shown by examination. The use of this water means a great deal of kidney trouble. In one year, in a Peking hospital, I have seen more Bright's disease and stone in the bladder than in almost three years spent in connection with much larger hospitals in the United States. Fortunately the Chinese have learned by experience that "raw" water is not good for them, and consequently drink it boiled and colored with a very weak tea.

Street Sprinkling.—The street, or traffic way, which is simply an unpaved mud road, is the common receptacle for rubbish, offal and excrement. It is sprinkled—when sprinkled at all—by hand. For this purpose no water can be too filthy. In fact, the cesspool by the roadside is the common source of sprinkling water.

House Sanitation.—Here we find no alleys as in American cities; each residence is surrounded by a wall, and one compound may contain numerous houses. All the refuse of bedchamber and kitchen finds its disposal upon the street or into an open sewer, where it decays immediately below the surface of the ground. It must be said, however, that the Chinese kitchen has practically no waste compared with the American. A potato paring is too valuable an article of food to be lightly thrown away.

Every day the manure gatherer may be seen, with a large keg suspended from his shoulders, trudging along the street gathering up the deposit. Here is to be found one of the most disgusting and unsanitary systems in the world; this excrement from man as well as beast is carried to different quarters of the city and prepared for agricultural purposes. From the sanitarian's point of view this does not need to be dwelt upon; such places are the charnal houses of disease, seething cauldrons disseminating poisonous vapors to be wafted over the city.



A Street Well.

Abbattoirs.—In front of meat shops the animals are killed upon the earth thresholds. In fact, on almost any walk along the street the whole process of the abbattoir may be seen.

Former Sanitary Efforts.—Here we have an open violation of the tripod of modern sanitary science, sewerage, water-supply and the disposal of refuse. At one time in the history of the city an effort was made to build large sewers, and the masonry of those they built is creditable; but the system was not general, and that which they did build has fallen into decay. there being little or no effort to keep it in repair. Here and there these old sewers serve a good purpose, but for the most part the refuse and waste water stand reeking in them and in the cess-pools until the stagnant matter is again thrown upon the street by the street sprinkler, to again disseminate its poison into the air.

Peking's Scavengers.—Peking is pre-eminently a city of dogs—large, savage-looking mongrels, but of cowardly spirit. These animals, while the vilest creatures ever seen, eat anything short of mortar and brick, and contribute greatly to the disposal of refuse; while their presence is a menace to public health, they are of positive usefulness in a city such as the Chinese capital. With these must be mentioned the black hogs of China, which run the city streets unmolested; they are the city scavengers, but add a great element of danger to the health of such a densely populated district.

The Houses.—The dwelling-houses are devoid of anything like a cellar. the floor being laid upon the ground and made of porous brick. Among the poorer classes, the floor is the ground itself. These permit of no circulating medium beneath their apartments, and the gases arising from the earth find ready access to the dwellings. Second story residences are unknown, except those built by foreigners. The windows of the Chinese house are made of lattice-work covered with thin sheets of paper. The rooms are heated, when heated at all, by very small earthenware stoves, in which they burn coal balls made from anthracite coal dust and mud. The rooms are often filled to a dangerous degree with coal gas; thousands of the Chinese die every year from asphyxiation, and it is in these houses with these accommodations that our troops have spent the long cold winter months in China.

Peking's [illegible] from all sanitary measures as a means of [illegible], nothing can take the place of bodily cleanliness. Beggars, ill-clad and filthy beyond description, cluster around the city gates and sit on every corner. A few years ago, a Chinese official states, in one night four hundred of them froze to death. This number has been greatly exaggerated, but the best Chinese authorities place it at the above figure. These beggars sleep in gateways, or wherever they find it convenient. Whatever may be said of them from the philanthropic point of view, where their number is legion, they are disseminators of disease, and must be placed among the evils to be removed in placing the city on a sanitary basis.

Disposal of Dead.—In the disposition of the dead Peking has reached the limit of human abominations. If the deceased be wealthy the corpse is kept in the courtyard for weeks. When the day comes for interment the only bearers who can be found to carry the coffin are the beggars, and the wealthier the family the more beggars they add to the procession. The most gruesome sight in connection with this subject is the method in vogue among the poor of disposing of their dead children. Too poverty stricken to provide a funeral, and holding the superstition that a child who dies before the age of 10 must have been inhabited by a demon, the parents or guardians wrap the body in a coarse straw mat and throw it into the street during the night. At daybreak the dead-cart, drawn by an ox, passes along and the driver gathers up these little cast-out infants and children. It not infrequently happens that an unwanted new-born baby still living is found, and it is taken with the rest and all are buried in a heap outside the city. The disease of which the child dies is a matter of no consequence, the manner of burial being the same. The ox cart is sometimes assisted by barrow men. A wheel-barrow with double baskets full of little dead smallpox patients was seen one day two years ago down near Legation street. The baskets were full to overflowing, with no covering over the dead, on whose disfigured faces the hot sun was shining.

Means of Conveyance.—The common mode of conveyance in Peking is a mule cart large enough for one passenger to get into and sit upon a padded cotton seat or a fur rug on the cart floor. In them is often to be seen an individual broken out with the smallpox, and the next occupant may have something little better. Cart stands are numerous, and it is safe to say that no carter ever refuses a passenger because of any known disease. No sanitary view of this capital would be complete if it did not consider the influence of these conveyances on the public health.

The itinerant barber is another prolific spreader of diseases peculiar to his trade. The terrific dust storms no doubt carry with them much infection from point to point. A physician who has practiced here for many years has said that the inhabitants of Peking who survive live only by the incessant warfare that goes on between the bacteria themselves, and the ever-faithful phagocyte endeavoring to save us from the disease germs. But here the former is waging a war against terrible odds.

An Object-lesson.—An American bishop who visited Peking recently stated that, on entering the city, he distinguished seventy-two distinct odors. Peking is an appalling object-lesson to those who think too much money is expended in the support of our American boards of health. Any physician who reads this paper can tell, given such conditions, what will be the diseases prevalent. They are such as are to be expected from these surroundings. Cholera is a frequent visitor, cholerine lives there, smallpox is not epidemic but resident, diphtheria is a dreaded foe, typhoid and typhus fevers with malignant malaria and dysentery are always present, and consumption slays its victims by thousands every year. There is also a multitude of skin diseases. In short, every germ-produced disease, and the non-microbic as well, capable of flourishing in this latitude, find their home in this Chinese metropolis. The infant mortality is enormous.

If the powers intend to hold Peking for any length of time it would be wise to add to that misty antiquity and ancient culture which the present Chinese minister, Mr. Wu Ting Fang, dwells upon so persistently, a chapter on sanitation and approximate cleanliness of people and city; at the same time insure to a greater degree the health of our troops stationed there in the interest of a better civilization.

One of the conditions that ought to be required of China before admitting her to the society of enlightened nations is that she shall make her capital less dangerous as a place of residence by ridding it of the insanitary conditions that give rise to the enormous prevalence of those diseases that are the product of filth—a remnant of unenlightened ages. Sanitary science applied to Peking would make it as healthy a city as New York or Chicago.

THYROID TISSUE IN THE LARYNX AND TRACHEA.*

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Up to the present time nine cases of thyroid tissue growing within the larynx and trachea have been reported. The histories of these have been collected by Baurowicz, who reports one of his own together with these, in Fränkel's Archives of Laryngology and Rhinology, volume viii, 1898. I have been unable to find a description of the affection since the publication of Baurowicz's article, so think that I can claim that the case of my own that I shall describe is the tenth recorded of this rare affection. Up to the present time the cases reported are 3 by Paul Bruns, 2 by Heise from Bruns' clinic, and 1 each by Ziemssen, Paltauf, Baurowicz and Roth. The principal symptom caused by thyroid tissue in the larynx and trachea is dyspnea. This may have lasted for years, months or weeks before the patient is seen, and generally there is a history of rapidly increasing difficulty of breathing for the last weeks before aid is sought. In a large proportion of the patients tracheotomy is needed to save life. The voice generally does not become hoarse or lose its clearness, as the growth does not ordinarily extend above the lower larynx high enough to interfere with the vibrations and mobility of the vocal cords. An exception to this was in the case of Baurowicz, where one cord was found immobile. Enlargement of the thyroid gland is not a necessary accompaniment of the disorder, but a goiter is quite often present. The thyroid tissue in the larynx and trachea does not cause catarrhal symptoms or irritation, and the dyspnea alone makes us aware of its presence. Where the narrowing of the lumen of the larynx or trachea is sufficient, stenotic breathing becomes noticeable. The ages of the patients vary between 15 and 30 years. The thyroid tissue forms a swelling of variable extent, at times a single tumor being found the size of a pea or bean, other cases presenting diffuse outgrowths occupying a great part of the lower larynx and extending into the trachea.

The most constant situation of the neoplastic swelling is the interior of the cricoid ring. From here the growth is found prolonged into the trachea to a variable distance, the extreme so far found being the fourth tracheal ring. The mucous membrane over the outgrowth is normal in appearance and usually smooth, but in some parts it may present an irregular surface. The tumor has a broad base which merges insensibly into its surroundings. No case is recorded where it was pedunculated. In some cases the thyroid tissue takes the form of a diffused swelling rather than of a definite tumor. This was notably the condition in my own case. As an exceptional site, the location of the growth in the trachea only, without involvement of the larynx, may be mentioned. In all but two cases the tumor was seated on the posterior and lateral wall of the lower larynx and trachea. In one it occupied the anterior wall of the trachea just under the thyroid isthmus. The new-formed tissue is nearly always extensive enough to cause serious dyspnea, great enough at times to necessitate immediate tracheotomy.

The laryngoscopic appearances of the growth usually show a smooth prominence below the vocal cords, over which they move freely and to which they do not seem to be attached. The swelling occupies the hypoglottic space on one or both sides or posteriorly, and in some instances may be seen extending down the trachea in a shadowy way, as the growth in the larynx permits but little light to pass below it. The swelling has a normal color and shows no evidence of inflammatory conditions.

ENTRANCE OF THYROID TISSUE INTO LARYNX AND TRACHEA.

How does the thyroid tissue enter the larynx and trachea? Up to the time of the report of Paltauf's case the accepted theory was that this thyroid tissue was due to aberration of the embryonic rudiments of the thyroid gland producing an accessory thyroid gland in the larynx, such as is rather often found at the base of the tongue. The postmortem examination of Paltauf's patient, however, showed that this theory was untenable. The moderately enlarged thyroid gland in his case was found firmly grown onto the cricoid cartilage and the first three tracheal rings so that dissection was needed to separate it. This differed from the normal conditions where the larynx and trachea are separated from the thyroid gland by a layer of areolar tissue. Microscopic examination showed that the deeper connective tissue of the submucosa, and the inner perichondrium clear to the cartilage, were infiltrated with the follicles of the thyroid gland. The space between the cricoid and first ring of the trachea, with a piece of the attached thyroid gland, showed direct connection between the inner and outer tumor. The thyroid tissue could be seen to grow into the external perichondrium of the trachea and through the interstitial spaces between the tracheal rings and in this way reach and intimately join the tumor in the larynx and trachea The peripheral layer of follicles of the thyroid gland shows the most energetic proliferation normally, especially at puberty, and if the normal layer of fascia separating the thyroid gland from the larynx and trachea has been omitted in the development of the individual, the thyroid follicles are liable to invade the interstitial spaces between the cartilaginous rings and, by their infiltration, enter the lumen of the larynx and trachea. An actual perforation of the walls of these air-passages is not necessary and has so far not been found. This mode of direct invasion of the tracheal and laryngeal lumen is the one advanced by Paltauf and Baurowicz, and as it has also been accepted by Paul Bruns it seems the correct explanation of the morbid process. Bruns' latest case, in fact, was a strong confirmation of this view, as the thyroid isthmus was found firmly attached to the anterior wall of the trachea directly over the site of the tumor removed by laryngotracheotomy.

Prognosis.—The prognosis of the affection is good if the growth is removed by operation, as the new tissue shows no tendency to reform afterward and as the wound is a clean one and not one in inflamed tissue, there is little danger of complications following the operation.

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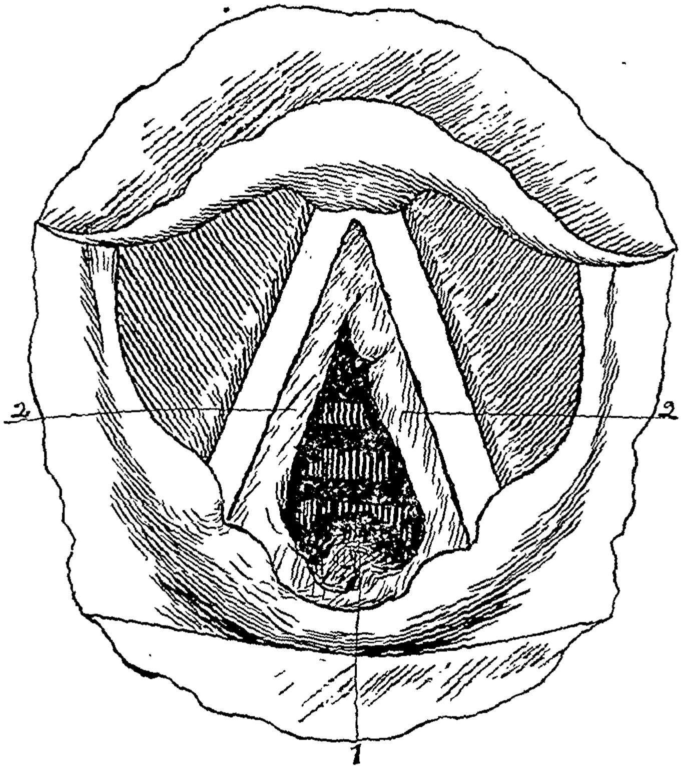
* Read before the Chicago Laryngological and Climatological Association, Nov. 15, 1900.

Diagnosis.—The diagnosis presents great difficulties. Baurowicz thinks that fibroma, if of broad base, ecchondroma or adenoma might come into question. Though rare enough in the upper larynx, fibroma and adenoma scarcely occur in the subglottic space. One in this location, however, could only be diagnosed from thyroid tissue by the microscope. If it could be touched with a probe the hardness of ecchondroma would differentiate it, though portions of a thyroid tumor may be exceedingly firm. Cricoid perichondritis secondary to syphilitic, tubercular or typhoid ulceration presents an entirely different picture and can not come into question. Metastatic or primary idiopathic perichondritis of the cricoid cartilage might resemble thyroid tumor in appearance; the inflammatory symptoms and local tenderness accompanying these affections and the septic etiology in metastatic perichondritis ought to suffice to distinguish them. In my opinion the condition most likely to be confounded with subglottic thyroid growth is chronic subglottic laryngitis, or chorditis vocalis inferior, as it is also called. In fact, my first diagnosis of my own case was this, a diagnosis confirmed in a meeting of the Chicago Medical Society by all the laryngologists present. The points of similarity in subglottic laryngitis are the appearance of a smooth swelling in the subglottic region and a history of dyspnea with exacerbations which may have lasted a long time and which is often so great as to make tracheotomy at once necessary. The differences are the bilateral location of the swelling in subglottic laryngitis and its continuity with the vocal cords. Though the swelling in laryngeal or tracheal thyroid tumor is usually unilateral, my case shows that it can be diffuse and surround the subglottic space symmetrically, in a manner precisely like that of subglottic laryngitis. The tumefaction in subglottic laryngitis is seen to be a part of the lower portion of the vocal cord and to partake of its motions. The upper surface of the cords is also apt to show swelling and congestion, while the cords in thyroid growth are normal in appearance, almost always freely movable and not connected to the growth. Hoarseness is usually not present, while it is a not uncommon symptom in subglottic laryngitis. As a general rule the local appearances in subglottic laryngitis are those of a diffuse swelling in the hypoglottic space, while the appearance of intralaryngeal thyroid tissue is that of a broadly attached tumor in most cases. It can be seen, therefore, that the points of dissimilarity are not striking enough to permit a diagnosis in all cases without a microscopic examination.



1. Prominence of thyroid tissue on posterior tracheal wall.
2, 2. Thyroid tissue in subglottic region.

Treatment.—The treatment of thyroid growth in the larynx or trachea usually requires laryngo-tracheotomy. The inaccessability and firmness of the growth, together with its broad base, make endolaryngeal methods impracticable. If, as in my case, the patient refuses a cutting operation, relief may be afforded by removal of pieces of the tissue through the tracheotomy opening, or through the glottis if possible. After the cricoid cartilage and tracheal rings have been split as far down as the tracheotomy wound, the growth can be cut off from its base with the knife or scissors. Bleeding is not great, and after three weeks, as a rule, the wound will be found healed, without trouble. The growth can not be enucleated, as it really forms part of the tracheal or laryngeal wall, but has to be shaved off from its base.

Case.—The history of my case is as follows: The patient, a woman of 32, was first seen in December, 1897. She had had attacks of hoarseness every second or third winter since her childhood. Her voice was always a little hoarse. In the winter of 1897 she was very hoarse for some weeks, and for the first time noticed that this was accompanied by a sense of suffocation and wheezing in the windpipe. All of these symptoms left her during the summer. In December, 1897, the wheezing and feeling of choking returned, and it was so bad as to alarm her and make her fear to go to sleep. Two months later this sense of suffocation had lessened, but the stridor of laryngeal stenosis could be heard when the patient breathed a little harder than usual. Laryngoscopy showed the larynx normal above the subglottic region. The vocal cords looked natural and were freely movable. Just below the true cords one could see a thickening of mucous membrane forming a ledge which projected into the lumen of the larynx around its whole circumference, forming an irregular ring with a narrow central opening. Just below the vocal cords this ledge was most prominent, looking like a second pair of vocal cords below the true ones. The thickening, as could be seen, extended down the trachea for three or four rings, forming a prominent tumor projecting from the posterior wall and preventing vision farther down. Palpation showed almost complete absence of the thyroid gland in spite of the fact that the patient was very thin, had a long neck and palpation of its structures was therefore very distinct. The subsequent history of the patient was interesting and contained some exciting events. An attack of laryngo-tracheitis caused her so much distress on account of the accompanying swelling narrowing still more the small opening in the trachea she ordinarily had at her disposal for breathing, that she decided something must be done for her, but refused any cutting operation, so the measures taken had of necessity to be endolaryngeal ones. As I had used electrolysis in the larynx for the removal of papillomata, with success and no appreciable reaction or swelling, it seemed to me that it would offer a safe means for the removal of a portion of the obstructing swelling below the glottis. With the help of cocain, the introduction of the negative pole in needle form into the prominence was quite easy. A current of 15 milliamperes was used for four minutes, with scarcely any pain. The next day there was no noticeable reaction, but on the second, subglottic swelling developed to such an extent that it became necessary to perform immediate tracheotomy. The swelling in the subglottic space subsided after about two weeks, though the result of the electrolysis was insignificant, but a small slough coming away. I had expected a better result as a similar current in the skin would have produced a large slough. A second attempt with the electrolytic needle did not add much to the result, though the lumen left in the larynx by the subsidence of the swelling was undoubtedly larger than before the operation. As the growth on the posterior wall of the trachea seemed responsible for the greater part of the dyspnea, I succeeded in getting my patient's consent to remove as much of this as I could through the tracheotomy wound. By means of the wire snare and a pair of Fränkel's forceps it was possible to take away the greater part of the intratracheal swelling, the most prominent part of which was situated at the second and third tracheal ring; this, when seen under the microscope, proved to be typical thyroid tissue. I repeatedly seized the swellings in the subglottic region with Scheinmann's cutting laryngeal forceps, from above, but the great firmness of the tissue made it impossible to remove even the smallest piece. After this the patient went about with her tracheotomy-tube, as her experience with suffocation made her feel unsafe without it, for though her breathing could be carried on quite well without it, she feared another attack of swelling and suffocation. She still refused operative measures from without, so I attempted to reduce the subglottic swelling with the galvanocautery, and, though I succeeded in introducing a cautery electrode into the growth from above, the result was infinitesimal. It is difficult to use instruments with accuracy in the subglottic region, and the necessity of avoiding injury to the vocal cords made it possible to burn only a very little at a time. The patient finally left me, improved but not daring to take out her tracheotomy-tube. I heard of her through others whom she consulted, and presume that perhaps by this time she has consented to a laryngo-tracheotomy, the only operative measure of value in this condition, as the thyroid tissue can only be removed by being dissected out.

I hope that my description will lead to the recognition of other cases of this kind which may be less rare than supposed. The fact that my patient had no appreciable thyroid gland in her neck leads to the supposition that a great part of it at least was represented by the extensive amount in her larynx and trachea, an amount greater than in most of the cases heretofore reported. Though in the other cases the thyroid tissue is described as forming a tumor, in mine its diffuseness made such a term inappropriate, it being rather a thick lining for the entire cricoid circumference and extending in the same manner down the back of the trachea. The only tumor-like formation was the prominence on the back of this that was removed.

In a recent article myxedema is described as following the removal of thyroid tissue at the base of the tongue, so it seems possible that the thyroid tissue in unusual situations may perhaps take the place of the normal gland. In regard to the power possessed by thyroid elements to penetrate and grow in other structures than the proper capsule of the thyroid gland, Dr. Christian Fenger, in a personal communication, mentioned a case in which the thyroid tissue had penetrated the lumen of the jugular vein. Dr. Fenger regards the microscopic specimens obtained from my case as typical thyroid tissue.

My experience with electrolysis in the subglottic region would make me hesitate to use it there again unless the patient had had a previous tracheotomy. A bipolar electrode, if it could be introduced, would doubtless be better than the monopolar one employed by me. Electrolysis would be an excellent method to employ for ecchondroma in this difficult region. On account of its loose areolar tissue the hypoglottic region is much more apt to react after irritation by inflammatory swelling than the larynx proper. The connective tissue, in the specimens presented, forms a much denser network than that of the normal thyroid gland; a fact which accounts for the great firmness presented by the growth.

288 E. Huron Street.

OPEN TREATMENT OF SUPPURATION OF THE KNEE-JOINT.*

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In the January, 1895, issue of the *Annals of Surgery*, Dr. C. H. Mayo reported a case of acute suppuration of the knee-joint, which he had treated July 30, 1894, by a transverse incision across the front of the joint in the same manner as for excision. This enables the surgeon to get at every part of the joint, converting its many recesses into a simple open cavity. The result of the operation is astonishing. In a few hours a patient in whom an amputation seemed to be the only hope is on the road to recovery; such a procedure gives all the benefits of the mutilating operation without shock or injury to important structures. It must be understood that this method of treatment is for the more advanced cases after the usual measures have been exhausted and amputation appears to be necessary. In most instances the capsule has been perforated and the soft parts above and below the joint are infiltrated with septic material. All of the important structures are in the popliteal space, and a transverse incision through the patella enables the surgeon to pack the joint with gauze, and treat it as an open wound. By going through the patella, secondary sutures are given a firm support after the infection is under control. The abscesses, if they exist in the soft parts, are freely opened and drained. The margins of the wound granulate rapidly and in from two to three weeks, when the discharge has practically ceased, the cut patella is reunited, the excess of granulations removed and the soft parts allowed to granulate.

Surprising to relate, not all of the cases are followed by ankylosis. If the cartilage of the joint is not eroded considerable motion may be ultimately obtained, although this is a secondary consideration, as the condition is one which threatens life or limb. The reason ankylosis does not always follow is because the adhesions are developed in the same manner as a pannus projects over the cornea and, unless the cartilage is completely covered by the advancing granulation, the portion which remains smooth permits of motion. If erosion of the cartilage has taken place ankylosis will necessarily result no matter what method of treatment is followed.

For the milder cases in which the capsule is intact irrigation with antiseptic solutions or with pure carbolic acid followed by alcohol, as advocated by Phelps, is often all that is necessary. If this fails, lateral incisions, as practiced by Halsted, or tubular drains after the plan of Edmund Andrews, may be sufficient, but there are still a number of neglected cases, especially punctured wounds, in which these ordinarily satisfactory methods are entirely inadequate and the patients have in the past come to amputation or death. Open treatment by transverse incision across the entire front and lateral aspects of the joint gives all of the benefits of amputation without its risks, and saves for the victim a most useful limb. We have practiced this method for six years in a number of cases with the most satisfactory results, and in children have obtained a range of motion from 15 to 60 per cent. of the normal. In conclusion I can not do better than to cite Dr. Arpad Gerster,[1] who says that Dr. C. H. Mayo's suggestion struck him as very plausible, and he has "applied it in two cases. The result has been excellent. As all know, these acute forms of joint phlegmon necessarily end in ankylosis, if, indeed, they do not cause loss of limb or life. The cartilaginous covering of the bones forming the joint is destroyed and, therefore, ankylosis is inevitable. Knowing this fact, the surgeon in adopting this method of treatment frankly accepts the necessity for ankylosis. The road then becomes very clear. The treatment consists in laying the joint open by a transverse incision, extending from one condyle to the other, just as a joint is laid open for resection. Then as many more incisions are made as may be necessary, in order to open up every collection of pus or fluid in or about the joint. The capsule in all of these cases is very intumescent and swollen and for this reason occludes all drainage tubes in a way to make retention inevitable. Then lay the joint freely open, removing or not removing tissues, as the case may be, pack and drain every recess, and treat it as an open wound. It is astonishing how rapidly the phlegmonous process ceases when compared with other methods of treatment. After the symptoms of active inflammation have subsided, the joint is put in proper position and ankylosis is allowed to take place."

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* Read at the annual meeting of the American Academy of Railway Surgeons, at the meeting held in St. Paul, Minn., Sept 5 and 6, 1900.

Since these remarks by Dr. Gerster, this method of operation has been applied in a large number of cases at Mt. Sinai Hospital, New York City, with the most satisfactory results.

QUANTITATIVE TESTS FOR PROTEOLYSIS.*

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BUFFALO, N. Y.

(Concluded from p. 808.)

The first table herewith presented gives the results of investigations on students who were free from subjective and objective evidences of stomach trouble, except for some transient disturbances of function as noted. The test meal throughout this series consisted of 50 grams of dry bread, 5 grams of butter, and 250 cubic centimeters of cold water, taken as a noon meal and removed by siphonage from sixty to ninety minutes after the completion of the meal. In no instance were remnants of breakfast found. In eleven of the sixteen examinations, syntonin was either altogether absent or present in the merest trace. The maximum precipitate was 20/100 c.c. in 10 c.c. As the qualitative examinations showed some slight variations from the theoretic normal, it was with some surprise that the following facts were deduced: 1. The presence of a measurable quantity of syntonin, was not connected with a failure of free HCl. In every one of the instances showing excess of syntonin, HCl was present by the resorcin and cane-sugar test. Conversely, HCl had all been fixed in three of the cases which were most typical so far as amount of syntonin was concerned. Hence, no generalization could be made as to the relation between proteolysis, at this stage, and presence of free HCl. 2. The excess of syntonin was connected with no conspicuous failure of ferments. However, it must be admitted that no attempt was made to carry out a test of ferments at every examination and that our tests for ferments are exceedingly crude and unsatisfactory. 3. The excess of syntonin was not connected with an excess of lactic acid. The test employed was that with ferric chlorid masked by gentian violet, as recommended by Hewes, of Boston, and others. This test seems just delicate enough to detect an excess of lactates without reacting to the small proportion normally present after ordinary test-meals. 4. The excess of syntonin was not connected with an abnormality in carbohydrate digestion. 5. The excess of syntonin was not in relation with the amount of chyme present at the time of extraction. 6. The excess of syntonin was not due to the time at which the stomach was emptied, within the limits of sixty and ninety minutes after the meal. 7. Of the five occurrences of a measurable amount of syntonin four were in the case of one subject.

Three cases showed albumose only in traces, the remainder varied between 5/100 and 20/100, eight yielding almost exactly 10/100 c.c. in 10 c.c. of filtered chyme. This variation seemed entirely within physiologic limits and without obvious cause.

Only nine of the series were treated with phosphomolybdic acid, the earlier examinations showing only the inapplicability of tannin and unmodified mercuric salts. One of the nine cases yielded a precipitate of peptone amounting only to 40/100 c.c. in 10 c.c. of filtered chyme, but the stomach contents could not be extracted until after dilution. The remaining eight cases varied between 110/100 and 290/100. Careful study failed to explain this wide variation. Disregarding the sample obtained after dilution, the maximum and the minimum of peptone were found in stomach contents which corresponded almost perfectly in other respects. Several control tests showed that, in the absence of starch, the precipitate of peptone with phosphomolybdic acid is almost exactly six times as bulky as that obtained with tannin. Calculating with this coefficient, three more cases may be added to the eight and the conclusions drawn are corroborative of the other results, namely, that the peptone precipitate is normally between one-tenth and three-tenths of the volume of the filtered chyme, if phosphomolybdic acid is employed.

In regard to other tests carried out in conjunction with the proteolysis, one or two observations should be made. The apparent absurdity of noting an absence of free acids in general while free HCl in particular is present is explained by the different sensitiveness of the respective tests. Benzopurpurin, according to the writer's investigation, is the most sensitive of the aniline dyes for general free acidity. Next in order comes Congo-red. The others thus far employed are so far inferior either in delicacy or in distinctiveness of color change, that they need not be considered. The series of observations on normal individuals corroborates the conclusions reached by Hewes, of Boston, based on a similar but larger series, namely, that the small bulk of chyme assigned by German writers as normal, after the test breakfast, does not hold good for Americans.[1] The totals obtained by the writer varied from 35 to 200 c.c., the average being 83, at least double the amount formally taught as normal. Although every precaution was used to secure the thorough emptying of the stomachs, it is obvious that any possible error must be in the direction of minimizing the bulk of the contents.

While a larger series of observations will be necessary to determine details, especially as to the proportions of the various proteids to be expected at different times after different test meals, the following conclusions are warrantable so far as the test breakfast is concerned, the stomach being evacuated within the usual limits of sixty and ninety minutes.

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[1] Tran. of N. Y. Surg. Soc., xxii, p. 503.

* Awarded First Gold Medal in Medicine, by the Prize Committee of the American Medical Association, at the Fifty-first Annual Meeting, held at Atlantic City, N. J., June 5-8, 1900.

[1] Boston Medical and Surgical Journal, 1897.

1. The proportions of the three stages of proteids do not vary materially during the third half-hour of digestion, nor according to moderate variations in other respects, in normal individuals.
2. Syntonin is most typically represented by a mere trace. It should not exceed 20/100 c.c. in 10 c.c. of filtered chyme.
3. Albumose, by ammonium sulphate, shows the same limits, but is most typically represented by 10/100 in 10 c.c.
4. Peptone, by phosphomolybdic acid, is most typically represented by 150/100 to 200/100 c.c. in 10 c.c., but may vary between 100/100 and 300/100.

While the precipitate by phosphomolybdic acid is peculiarly bulky, that by tannin is fairly comparable with the precipitates of the lower proteids. The use of various reagents, especially for albumose and peptone, will afford support for the most contradictory statements regarding the amount of these substances formed. Ewald's statement that very little true peptone is formed by the stomach, has already been referred to. Hemmeter, of Baltimore, on the other hand says: "In normal digestion, *one hour after the test-breakfast, propeptone,*" (albumose), "is present only in trace or, usually, is not to be detected at all." The results obtained in the present series are, in a sense, contradictory to both of these statements but comparisons can fairly be instituted only when investigations have been made following the same technic. At present, clinical students of digestion are greatly hampered in their attempts at scientific work by the lack of expert chemical authority on phases of digestion which appeal strongly to the practitioner, but have not as yet interested chemists. The chemical crudities of the present paper have not been allowed to pass as final without a diligent effort to secure corroboration or revision at the hands of local and other American chemists, but it has not been possible to find more exact information than that already given.

In considering the second table, comprising the results of examinations on pathologic cases, it should be remarked that, while the meals and the period of digestion varied widely, the conditions of digestion of dissolved particles of albumin—with which the present study of proteolysis is concerned—do not vary so widely. That is to say, when the gastric juice has attacked a particle of albumin, whatever the time after the meal, the successive stages of peptonization require just about the same delay, while the proportion of the higher products is limited by absorption. Even Boas' discovery regarding the difference of the stages of digestion of meat albumin on the one hand and of egg and plant albumin on the other, assumes relatively less importance when the various intermediate products between syntonin and peptone are precipitated by ammonium sulphate. Under normal conditions, active hydrochloric acid and ferments are present in about the same proportion during the entire period of digestion of any mixed meal, barring the preliminary hour or so. Thus while the amount of proteid food taken may modify the proportion of free HCl and while the latter factor may, in turn, exert a marked influence on carbohydrate digestion in the stomach, the conversion of albumin is not materially influenced unless, by overtaxing the capacity of the stomach, the secretion of gastric juice becomes relatively insufficient or unless a genuine defficiency or excess of secretion or some other pathologic factor is introduced. Penzoldt's investigations as to the course of digestion after the most varied meals support this theory. Rosenheim's curves of acidity for various meals show distinct differences as to abscissas of time and ordinates of hydrochloric secretion when the curves after various test meals are contrasted. But if we change the position of the perpendicular axis, in other words, allow a little longer for the preliminary stage of digestion in hearty meals, the various curves present insignificant differences throughout the active period of digestion. Thus, it is really possible to institute comparisons without demanding absolute correspondence as to kind and amount of food, time of withdrawal of sample, state of starch digestion, etc.

One possible fallacy must, however, be borne in mind. The amounts of the end-products of digestion, maltose, peptone, and probably the higher albumoses also, in the case of the stomach depend on two opposite factors—digestive activity and absorption. Thus it is always puzzling and sometimes quite impossible to determine whether a large amount of an end-product signifies good digestion or poor absorption. It ought also to be admitted—though many excellent authorities do not—that

TABLE 1.

Number.	Duration of Digestion; hours.	Amount, c.c.	Free Acid.	HCl	Lactic Acid.	Starch	Erythrodextrin.	Maltose.	Rennet.	Egg Test.	Albumin by Heat	Albumose $(NH_4)_2SO_4$	Peptone Phosphomolybdic.	Peptone by other Reagents.	Remarks.
1	1	60	Yes.	Yes.	Slight.	No.	Yes.	Yes.	Yes.	Yes.	20/100.	5/100.	....	5/100 $HgCl_2$.	All stomachs normal in location.
2	1	75	"	Slight.	No.	Yes.	"	"	"	"	5/200.	12/100.	....	Trace "	
3	1¼	50	No.	No.	"	No.	"	"	"	——	Trace.	Trace.	....	" "	
4	1½	80	Yes.	Marked.	"	Yes.	"	"	"	Yes.	20/100.	10/100.	....	" "	
5	1½	40	"	Slight.	Yes.	No.	"	"	"	——	Trace.	8/100.	....	30/100 tannin.	
6	1	90	"	Yes.	"	"	"	"	"	——	"	15/100.	....	21/100 "	
7	1½	25	"	Slight.	No.	Yes.	"	"	?	Yes.	"	Trace.	....	5/100 $HgCl_2$.	
8	1	20 diluted	No.	Yes.	"	"	"	"	Yes.	——	"	10/100.	....	40/100 tannin includ. starch	
9	1	40	Yes.	"	"	No.	No.	"	"	——	5/100.	Trace.	290/100.	....	Total proteids 45/100 tannin.
10	1¼[1]	200	"	"	"	"	Yes.	"	"	——	Trace.	20/100.	200/100	....	
11	1	100	"	"	"	Yes.	"	"	——	——	2/100.	20/100.	160/100	....	Total proteids 30/100 tannin (total acidity 47%; free HCl 5%; resorcin indicator)
12	1	160	No.	No.	"	"	"	"	Yes.	——	Trace.	10/100.	190/100.	....	Total acidity 67%.
13	1¼	150	"	Trace.	"	"	"	"	——	——	"	10/100.	180/100.	....	Total acidity 56%.
14	1½	100	"	Trace.	"	"	"	"	——	——	"	10/100.	220/100.	....	Total acidity 55%.
15	1	50	"	Yes.	"	No.	"	"	——	——	"	10/100.	110/100	....	
16	1¼	25	"	No.	"	"	"	"	——	——	"	6/100.	150/100.	....	

Test meal for all in Table 1: 50 grams bread, 5 grams butter, 250 c.c water. A —— indicates that a test was not made. All were young, healthy medical students, all male except the last.

[1] Also took glassful of wine some minutes after test-meal.

TABLE 2.

Number.	Name.	Test Meal.	Duration of Digestion; hours.	Amount of Chyme, c.c.	Free Acid.	Free HCl.	Lactic Acid.	Starch.	Erythro-dextrin.	Maltose.	Syntonin, heat.	Albumose NH_4 2SO$_4$	Peptone phospho-molybdic.	Other Reagents for Proteids.	Total Acid, per cent.	Free HCl, per cent.	Diagnosis.	Rennet.	Egg Test.
1	R. B.	Bread, butter and 250 c.c water for R. B. intervals, 2, 4, 7 and 10 days between meals.	1	500	Yes.	Yes.	No.	Yes.	Yes.	Yes.	20/100	5/100	240/100	Taret solution; peptone 4/100	86	53	Hyperchlorhydria and supersecretion.		
2	"		1	500	"	"	"	"	"	No.	20/100	20/100	240/100	Total proteid 30/100.	90	56			
3	"		1½	330	"	"	...	...	...	...	20/100	Tr'ce	140/100	Peptone 20/100	96	58			
4	"		1	250	"	"	No.	No.	Yes.	Yes.	20/100	5/100	120/100	Peptone 10/100	86	61			
5	"		1½	150	"	"	...	Yes.	"	Tr'ce	20/100	2/100	150/100	...	81	50		Yes.	Yes.
6	J. L. J.	The same meal; interval of two days between.	1	50	"	"	No.	No.	"	Yes.	Tr'ce	10/100	100/100	Peptone 5/100	90	62	Hyperchlohydria.	Yes.	Yes.
7	"		2	50	"	"	...	"	"	"	"	10/100	360/100	Peptone 30/100	148	96			
8	F. J. O.	Graham bread, coffee and cream, 250 c.c. oatmeal, cream, toast, mixed breadstuffs, bread, butter, 250 c.c., water same. Intervals, 75, 50, 62, 115 and 50 days between tests	6½	80	"	No.	No.	"	...	No.	30/100	Tr'ce	...	Peptone 10/100	...	...	Atonic dilatation and subacidity relieved at about time of second examination.	Normal at sev. previous tests.	
9	"		4½	30	"	Yes.	"	"	No.	Tr'ce	40/100	"	70/100	Total proteid 30/100 by tannin.	108	55			
10	"		6¼	30	"	"	"	"	"	"	25/100	"	52/100	...	...	...			
11	"		1	40	"	"	?	Yes.	Yes.	Yes.	20/100	2/100	110/100	...	...	...			
12	"		1½	60	"	"	...	No.	"	"	20/100	10/100	...	...	...	...			
13	"		1	50	"	"	Yes.	"	"	"	35/100	15/100	180/100	Peptone 10/10 by tauret.	76	4			
14	A. T. M.	Meat, bread, 250 c.c. water; one week interval.	3½	...	No.	"	...	"	No.	"	20/100	Tr'ce		Peptone 11/100 by tannin.	...	...	Dilatation and catarrh, hepatic sclerosis.	Yes.	Yes.
15	"		3½	...	"	"	...	"	"	"	20/100	"	133/100	Peptone 20/100 by tannin.	32	5		Yes.	"
16	G. W. T.	No. 16 same as No. 14; hearty meal for Nos. 18 and 18; intervals, 22 and 11 days.	2	...	"	No.	No.	"	Yes.	"	15/100	5/100		Peptone 15/100 by tannin.	...	...	Atonic dilatation and hypochloridia.		
17	"		4	...	"	"	"	"	"	"	Tr'ce	Tr'ce	175/100	Total proteid 50/100 by tannin.	...	...			
18	"		1	450	Yes.	"	...	...	...	...	"	10/100	85/100	Total proteid.	29	0			
19	H. L. B.	Same as No. 1.	1	60	"	Yes.	...	No.	Yes.	Yes.	15/100	2/100	90/100	...	...	...	Atonicity, hypochlorhydria.		
20	B K.	Same as No. 1.	1¼	50	No.	Tr'ce	Yes.	"	No.	No.	20/100	5/100	60/100	...	...		Hypochlohydria	Yes.	Yes.
21	H	Same as No 14.	1¾		"	No.	No.	"	Yes.	Yes.	5/100	25/100	...	Peptone 20/100 by $HgCl_2$.	...	...	Cancer	"	"
22	R	Bread and milk	5	500	"	"	Yes,	"	No.	"	30/100	Tr'ce	180/100	Peptone 40/100 by Tauret solut'n	38	0	Cancer	"	No.
23	Mrs. P.	Chicken, bread and butter.	1⅗	75	"	"	"	"	"	No.	None	15/100	500/100	Total proteid 40/100 by Tanret.	118	0	Hyperkinesis		
24	W. F. V.	Same as No. 1.	1¼	80	Yes.	Yes.	No.	"	Yes.	Yes.	20/100	10/100	260/100	...	104	43	Slight dilatation, syphilis.		
25	F. K.	" " "	1	...	No.	No.	"	"	"	"	20/100	Tr'ce	210/100	...	66	0	Chronic gastritis.		
26	G. L.	" " "	1	40	"	"	...	"	"	"	20/100	3/100	375/100	...	69	0	Chron. gastritis and erosions		
27	"	" " " 15 days interval	1	50	Yes.	Yes.	No.	"	"	"	20/100	2/100	280/100	...	72	2			
28	C. L. B.	" " "	1⅗	200	"	"	"	"	"	Tr'ce	Tr'ce	2/100	270/100	...	90	13	Atony.		
29	J. J. M.	Two slices of toast, butter, 250 c.c. water.	1	50	"	No.	Yes.	"	"	Yes.	None	Tr'ce	280/100	Peptone 20/100 by tannin.	85	0	Chron. scolecitis, healed gastric ulcer.	We'k	
30	"	Eggs and cereals.	3½	300	"	"	"	"	No.	No.	Tr'ce	20/100	300/100	...	85	0			
31	Mrs. J. P.	One slice of bread, butter and 250 c.c. water.	1½	100	"	Yes.	Yes & ac'tic	"	Yes.	Yes.	10/100	3/100	200/100	...	75	2	Gastroptosis, movable right kidney.		
32	Dr. R.	Same as No. 1.	1¼	90	"	"	Tr'ce	"	"	"	Tr'ce	10/100	200/100	...	60	29	Hepat. sclerosis, slight gastric dilatation.		
33	Mrs. Mc.	" " "	1¼	40	No.	No.	Yes.	Yes.	"	"	3/100	Tr'ce	80/100	...	40	0	Gastric hemorrhage. Cancer?	We'k	
34	Miss P.	" " "	1¼	70	"	"	No.	No.	"	"	None	"	260/100	...	43	0	Subacid dyspepsia.		
35	G. A. Mc.	" " "	1½	50	Yes.	Yes.	"	"	"	"	25/100	"	145/100	...	99	61	Hepat. scler., gastr'c catarrh.		
36	A. C. C.	" " "	1¼	40	"	"	Slig't	"	"	"	5/100	2/100	320/100	...	66	23	Slight gastric dilatation.		
37	M. B.	" " "	1¼	130	...	No.	Yes.	"	"	"	30/100	10/100	100/100	...	22	0	Ulcerating gastric cancer.		
38	A. J. S.	Four slices of bread, butter, 250 c.c. water.	1½	123	No.	"	No.	"	No.	"	None	3/100	270/100	...	70	0	Gastroptosis, mov. rt. kidney.		
39	S. McJ.	Fifty g. bread, 5 g. butter, 250 c.c. water.	1¼	40	Yes.	Yes.	"	"	Yes.	"	25/100	3/100	130/100	...	84	15	Incipient hepatic sclerosis.		
40	L. V.	Same as No. 1.	1¼	80	...	No.	Slig't	Yes.	"	"	20/100	Tr'ce	200/100	...	70	0	Subacid dyspepsia (simulating hypercolorhydria.		
41	Mrs. J. S.	" " "	1¼	60	Yes.	Yes.	...	...	...	...	20/100	"	200/100	...	96	9	Atonic dilatation (persistent pyrosis).		
42	Mrs. E. L.	" " "	1½	100	"	"	...	No.	Yes.	Tr'ce	12/100	12/100	[1]	...	76	12	Chronic typhlitis, flatulent dyspepsia.		

In Cases 34 to 42, rennet test good, except in 37, in which it was lacking. Egg digestion not tried.

[1] Abundant (centrifuge broke).

we have no reliable test for absorption. The tests with potassium iodid and methylene blue involve so many unknown quantities that only a great divergence from the empiric normal standard is significant. In such extreme cases we need no scientific test. In view of the quite general dependence that has been placed on the test by titration of solutions of sugar or other absorbable substances, that have been left in the stomach for some time, a few words of refutation may be in order. As is well known, such a solution is found by titration, after siphonage, to be more dilute than when poured into the stomach. Thus it has been claimed, 1, that no absorption of water occurs through the gastric glandular membrane; and 2, that by titrating the solution and comparing with a previously established standard, absorption can be accurately measured. The writer has proved that during ordinary lavage an amount of water, equal approximately to the total contents of the stomach, is lost either by absorption or by passage through the pylorus. Judging by auscultation, the escape of liquid through the pylorus under any circumstances short of nearly complete closure, is an important factor. While loss by absorption from the stomach is usually mainly of soluble solids, not of water, it is by no means certain that the stomach never absorbs water and the assumption of such a hypothesis is prima facie evidence of the unreliability of a quantitative test. In the case of R. B., of Table 2, the test meal was diluted by gastric juice to the extent of about 100 per cent. It is altogether likely that a similar dilution would have followed the introduction of a solution of an absorbable substance introduced to test gastric absorption. Even if the test solution happened to be of the same bulk when withdrawn as when introduced—not counting the increments of water used in this method to insure thorough evacuation—it would be altogether probable that there had been loss of volume by passage through the pylorus and compensatory secretion. To speak in mathematical terms, the loss through the pylorus, the removal by absorption and the addition by secretion are unknown quantities. Furthermore, they are irregular variables that are not functions of one another. Yet the attempt has been made, not only to make these three variables constant quantities, but to assign a definite value to one of them, through the solving of one equation, involving knowledge of the original strength of a solution and its content after removal from the stomach after a certain delay.

Referring to Table 2, it may be of interest to discuss the cases somewhat in detail. The case of R. B. was one of supersecretion and, essentially, of hyperchlorhydria. Although the proportion of free HCl was not beyond the normal maximum—unless we accept the very low standard of hydrochloric acidity adopted by Dr. Reed, of Philadelphia, and some others—the formation of acid by the gastric glands was actually large and the symptoms included local irritation of the gastric wall as part of the local condition present. The digestion of starch was about as would be expected *a priori*. The abatement of the hyperchlorhydria is seen rather in the diminution of the total volume of the stomach contents than in a percentage change of acidity. Throughout all five tests the proportion of syntonin was at the normal maximum, as if the first stage of proteolysis, which is essentially one of saturation with acid, had been crowded on the later stages. The variation of albumose was within normal limits, but no satisfactory explanation of the difference between the several examinations can be advanced with our present knowledge, unless, perhaps, to suggest that, as the time after the meal increases the intermediate stages are more rapidly passed through. The fact that the amount of peptone varied in general according to the amount of stomach contents might be interpreted to mean that the excess indicated poor absorption rather than good digestion, still the variation was within normal limits.

The case of J. L. J. was also one of hyperchlorhydria, but without supersecretion. The titration of the second sample was repeated to verify the unusually high acidity which is the maximum observed by the writer in any case.

The case of F. J. O. represents, for the first three examinations, diminished motility. The case was originally one of atonic dilatation of the stomach with achlorhydria, but, at this time, the stomach had returned to normal size and the hydrochloric secretion had been nearly normal for some weeks. It is scarcely necessary to state that the emptying of the stomach on these three occasions was undertaken for therapeutic reasons, otherwise more typical test meals would have been ordered. However, they do not differ materially, except in bulk, from the standard Ewald breakfast or the slight modification adopted by the writer. At several other treatments during this period the stomach was found nearly or quite empty. The last three test meals were taken and removed under circumstances that allow a fair comparison with Table 1. Unfortunately, the loss of a reagent bottle prevented the application of the usual test for peptone on one occasion. Whether on account of the difference in meals and duration of endogastric digestion or because of the improvement that actually occurred, the second set of three examinations shows that the balance has swung from lower to higher stages of proteolysis. A comparison between the last three examinations and the results of Table 1 show that further improvement in the same direction is to be desired. (The patient has since made a good recovery.)

The case of A. W. M. was somewhat similar, but the delay of the chyme in the stomach was due to actual present dilatation. The patient came from a considerable distance and the railroad time-table prevented the use of a test-meal adapted to withdrawal after an hour. On this account the patient would take a test dinner before leaving home and have it withdrawn immediately on reaching the office. While undiluted chyme was obtained for examination, it was not possible to empty the stomach except after adding water, so that an exact measurement of the contents was impossible. Probably they did not exceed 100 c.c. in any instance. It has already been explained that even if the increment of water is measured before introduction, an exact estimation of diluted stomach contents can not be made. The relative increase of peptone coincided with marked subjective improvement and a rapid diminution of the size of the stomach. At subsequent examinations after the same meal the stomach was always found practically empty.

G. W. T., H. L. B., and B. K. represent nearly identical conditions of subacidity and atonicity. On the whole, they show a relative diminution of peptone.

In the two cases of cancer it was impossible to regulate the tests to correspond at all with the others, and they are reported merely as isolated observations which may acquire some value with a better understanding of the subject of proteolysis. The case of R. was noteworthy in two respects; the rennet test several times resulted normally while the attempt to digest egg albumin after adding HCl failed. This observation is contrary to the general belief that the two ferments rise and fall together, so that coagulation of milk may be employed as an easy, though indirect, test of peptic power. The second point deserving attention is that the patient, first seen in consultation during November, showed an increasing pyloric stenosis with obstinate constipation and the return of food and drink by vomiting. About Jan. 1, 1899, the diagnosis of cancer was verified by the finding of cancer nests microscopically in the wash-water of the jejune stomach. After this the pyloric stenosis rapidly abated, the patient gained somewhat in weight, the stomach returned to normal size, vomiting became infrequent and it is only recently (note made April 28) that the signs of stenosis have been again manifest. (The patient has since died.)

Mrs. P. had passed the test breakfast into the intestine by the end of the first hour, so that, for the next meal, meat was added. The rapidity of the passage of food through the stomach is shown here, also in that only 75 c.c. remained of a meal amounting to about 400 c.c. Her stomach was somewhat larger than normal, but under the circumstances it might be more appropriate to use the term "megalogastria" rather than dilatation to describe her condition, the latter term being usually associated with more or less gastric stagnation. The digestion of the dissolved starch had been completed and all the maltose absorbed, yet the precipitate of peptone made up half of the volume of the filtered chyme The large combined acidity, with total lack of free HCl, is probably in intimate relation with these two facts. This case shows the maximum of peptone production observed by the writer.

W. F. V. was the patient of a neurologist, referred for examination on account of complaint of gastric symptoms. The analysis and physical examination failed to reveal stomach trouble. It will be noted that the quantitative estimation of proteids, though rather high in each instance, did not pass the normal limits.

F. K., who had previously suffered from atonic dilatation of the stomach with obstinate subacidity, remained well for two or three years and then presented himself with typical symptoms of hyperchlorhydria. The result of the examination shows how erroneous this preliminary diagnosis was and emphasizes the impossibility of making accurate diagnoses of gastric troubles by symptomatology alone. Proteolysis was practically normal, though syntonin was rather high.

G. L. presented no peculiarities beyond those clearly shown in the table. It may be said in general that the pathologic series shows a higher average of the preliminary proteids and a variable condition of peptone.

C. L. B. represented what may properly be termed a nervous dyspepsia, as, even after the restoration of his gastric motor function, he continued for some time to complain of symptoms of stagnation.

J. J. M. showed at several previous examinations a marked diminution of hydrochloric acidity, even after two or three hours of gastric digestion. He had an attack of what was described by his home physician as subacute scolecitis, toward the close of his treatment for the gastric condition. The latter was regarded as an independent affection, not a reflex from the bowel, on account of a distinct history of hematemesis. In spite of this interruption, the subsequent course of the gastric lesion was favorable.

Mrs. J. P.'s case was remarkable in that there was not a general splanchnoptosis, in spite of the marked prolapse of the stomach—the lesser curvature being just above the umbilicus—and the movability of the right kidney. The esophagus was dilated, 250 c.c. of distinctly esophageal mucus being vomited at one time and the gastro-diaphane kinking without reaching the stomach, its stiff end of nearly two inches having turned within the esophagus.

Dr. R., in spite of considerable subjective discomfort and of the physical abnormalities of the stomach and liver, showed a good and consistent chemic condition.

Mrs. Mc.'s examination also resulted consistently, except that stagnation was not in evidence.

Notes on Chemic Examinations.—Acidity in No. 9 was taken from similar sample next day.

In Nos. 1, 7, 13, 24, resorcin and sugar used as indicator for free HCl; in others dimethyl-amido-azo-benzol. The former method is more tedious, but more accurate. Phenolphthalein used as indicator for total acidity in all examinations. Percentages refer to c.c. of n/10 NaOH solution, as compared with number of c.c. unfiltered chyme.

Diagnosis in Nos. 21 and 22 made from microscopic recognition of fragment of tumor. No. 21 died eight months after this examination.

Combined HCl by alizarin, 66 per cent. for No. 23, 25 per cent. for No. 24; in Nos. 25 and 26, free HCl perhaps disguised by presence of blood from siphonage. In No. 27, combined HCl, 45 per cent.

THE RAGE FOR RAPID OPERATING AND THE IMPORTANCE OF SAVING TIME IN SURGICAL OPERATIONS.

JOHN S. MILLER, A.M., M.D.
Ex-Surgeon to St. Joseph's Hospital of Philadelphia; Demonstrator of Anatomy, Gross Medical College.
DENVER, COLO.

The question of time consumed in surgical operations is an important one. In the pre-anesthesia days time meant much to the unfortunate victim, whose vitality or resisting power was already reduced by nauseating and depressing drugs, such as infusion of tobacco, opium, etc., given with a view to benumbing the sensibility of the patient, who was frequently held by a corps of powerful assistants, or fastened to the operating-table by straight-jackets, straps or other devices. Dexterity and speed on the part of the surgeon then were indeed desirable factors to the shrieking and suffering patient.

The introduction of anesthesia lessened the necessity for speed, and also removed the disturbing elements which may have interfered with the accurate fulfilment of delicate operations. Anesthesia, when properly induced, produces a tranquility in the patient, operator, and assistants, which is highly essential for the proper and successful progress of the operation. In this, however, many surgeons permit themselves to drag in their work, and for the time seem to forget that the state of general anesthesia is a dangerous one and that not a minute should be wasted. It is a well-established fact that prolonged anesthesia is a retarding element in the convalescence of the patient. This is the more prominently exemplified in a complicated abdominal case, in which the resisting power of the patient has been stimulated to a point when it is estimated that the patient has a chance to survive the operation. The anesthesia, exposure and manipulation of the peritoneal cavity for from one-half to three hours, with a physically bankrupt patient is a very important factor in the prognosis. These facts being accepted, time is as important an element to success as asepsis or correct methods in operating.

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W. C. GATES, M.D.

ROCKLAND, MICH.

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I would ask my hearers to lay aside all prejudice and consider this subject in the true scientific spirit, going back to the fundamental underlying principles: 1, the passions actuating those who keep this evil in existence; 2, the breeding of children and the hereditary mental influence to which they are subjected; 3, the want of police and medical supervision through a morbid sentiment and a lack of knowledge in a class which wields the greatest influence.

I will first define a passion as a certain movement of the mind which not only influences, but predominates and controls the entire organism. What is the one supreme passion in man? What is the one supreme passion which actuates and controls, not only man, but all living organisms, without which, if suppressed, all life would soon cease to exist? The answer is plain—the sustenance of life. The passion which ra [illegible] t, to this and nearly equals it in power is the [illegible] n of life. If either of these passions were [illegible] life would soon cease to exist. They are laws of Nature and no arbitrary law of soc [illegible] press them or control them except to a [illegible] extent. These facts should nev [illegible] lo Prostitution finds the reason fo [illegible] ist of these passions, and if socie [illegible] from the evils arising from pr [illegible] the subject carefully and act [illegible] prejudice.

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Prostitution has existed under every social system of which the world has knowledge. Lecky, in his "History of European Morals," says: "Under these circumstances, there has arisen in society, a figure which is certainly the most mournful, and in some respects the most awful upon which the eye of the moralist can dwell. That unhappy being whose very name is a shame to speak, who counterfeits with a cold heart the transports of affection and submits herself as the passive instrument of lust; who is scorned and insulted as the vilest of her sex, and doomed for the most part, to disease and abject wretchedness, and an early death, appears in every age as the perpetual symbol of degradation and the sinfulness of man. Herself the supreme type of vice, she is ultimately the most efficient guardian of virtue. But for her the unchallenged purity of countless happy homes would be polluted, and not a few who in the pride of their untempted chastity, think of her with an indignant shudder, would have known the agony of remorse and of despair. On that one degraded and ignoble form are concentrated the passions which might have filled the world with shame. She remains, while creeds and civilizations rise and fall, the eternal priestess of humanity, blasted for the sins of the people."

While prostitution may be a necessary evil under our present social system, the experience of the past and the opinions of the best posted men in other nations and in our own country, prove beyond question that many of the resultant evils are not necessary and may, to a great extent, be prevented. As a step in this direction, I would suggest the AMERICAN MEDICAL ASSOCIATION invite the most able and prominent men throughout the country, considered to be the best posted on this and relative subjects, to a conference for the purpose of adopting such measures as, in their judgment, will result in the greatest good to the race and to society. I would ask not only physicians but police and other officials from our great cities, and any one who may be qualified to speak with authority on the subject under discussion.

Personally, I believe it is a mistake to try to, and an impossibility to suppress prostitution by passing laws and imposing penalties, but that society may eliminate and possibly eradicate the vice, by means of education and more careful breeding. I am of the opinion that less than 10 per cent. of the children born are the result of an actual desire for children backed by an intelligent study in an effort to breed and raise the best. This would leave over 90 per cent. born as the result of accident, while following the pursuit of physical pleasure, which must certainly have a great influence on the race and on the problems we are now considering. Out of this 90 per cent., a portion will most surely be born with perverted and abnormal instincts and passions.

A physically perfect man, standing high financially, and occupying a prominent place in society, may have a deformed moral nature which he recognizes and covers up, or, again, he has never thought of nor been educated on sexual relations. He marries a refined and highly-cultured woman. Ordinarily a model man, he occasionally finds some jolly companions, winds up with a big spree, goes home drunk, sick, and filthy, revolting to his wife and family. His wife is horrified and disgusted, and while he insists on his marital rights, she loathes the contact but is compelled to submit. If conception takes place what kind of an individual will be developed? If the mental qualifications be derived from the mother, a sexually cold and passionless being; if from the father, possibly the opposite extreme. If the mother feels that conception has taken place, broods over her troubles, becomes reckless, tries to murder the child before it is born and fails, a graver element is added to the hereditary influences acting on the child.

Prostitution is a very great evil and its suppression would be a desirable thing, but so long as a great majority of the children born are subject to the worst hereditary influences associated with the sexual passion, and the question of how to breed and raise the best is seldom considered, I do not think its suppression possible. An individual is what he is born, plus his environment. The environment may be changed, but the other qualifications, such as stature, etc., are unchangeable, except to a very limited extent; therefore, some individuals are no more to blame for being prostitutes than others are for having red hair, or blue eyes. The enaction of proper laws to control prostitution and restrict the evils arising from it, with the best measures possible in educating the coming generations on these subjects, I believe is the best that can be done at the present time.

Social purity should be one of the ideal aims of society, and I believe its nearest attainment will be found through the means of education. Our medical schools should give more thorough instruction in sexual hygiene and physiology. Medical men can have great influence in moulding public opinion and causing people to give their children proper instruction in sexual matters. In a majority of our homes at present, if a child dares to ask a question pertaining to sexual matters, it is either lied to or deceived, or silenced in such a way that its mind receives a great shock. That all living organisms reproduce themselves is a fact which may be taught a child with plenty of every-day illustrations, without any element of sensuality presenting itself.

I think that the most wofully ignorant of all classes on such subjects are the clergymen and teachers, and as they wield immense influence their education should not be neglected; and unless special attention be given to the leaders of the churches, they will oppose all efforts along this line, because the truth runs counter to their pet prejudice on the subject of morality. While the church influence is unsatisfactory in the extreme, it is so through ignorance and prejudice. To those who will investigate this subject farther and wish positive and definite information, I would suggest a study of Lecky's "History of European Morals"; Sanger's "History of Prostitution"; Wier's "Lust and Religion"; Lydston's "Text-book of Venereal and Sexual Diseases"; and such other books as will suggest themselves in reading these.

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It is quite common in hospital clinics for the operator to lecture to his class while leaning over his work, and, frequently straightening up to address the students, and thus many valuable minutes are lost. A very wise practice is now being introduced in the German clinics. The professor operates, while one of his clinical assistants lectures to the class, or *vice versa*. The operator can thus concentrate his mind on the important task before him. Professor Albert, of Vienna, lectured to the students while his assistant, Ewald, operated. This method is advantageous to both patient and student. But few are endowed with the ability to lecture and operate simultaneously.

An operation should be done with despatch, without the semblance of undue haste or attempt at show, flourish or brilliancy. Such "speed" should be consistent with good conscientious work and the best results. Despatch in surgical operations is often misconstrued as haste and carelessness by jealous rivals. The operator is rapid whose equipment is thorough from his anesthetizer and first assistant to the application of the safety-pin which secures the final turn of the bandage. He accomplishes his object who does not allow his plans to be modified by suggestions from visitors or guests, who is prepared to promptly combat any emergency that may arise, who operates deliberately, who does not drop his instruments on the floor, and who, in picking up an instrument from the tray, does so for a definite purpose. Such an operator knows what he wants two or three stages in advance, and gives his orders accordingly, so that there shall be no loss of time. His assistants are well trained ("team work") and comprehend his wants by a look or gesture, thus avoiding misunderstanding, conflicting orders and collisions.

It is in the saving of the minutes and avoidance of unnecessary delays that the minimum amount of time is consumed in performing the operation. Such methods should constitute "rapid operating."

VENEREAL DISEASE AS A SOCIAL PROBLEM.*

W. C. GATES, M.D.
ROCKLAND, MICH.

When studying medicine I was taught, not only by one but by many, that if I would attain to the greatest degree of success in the profession I must treat every patient who presented, no matter what his social position or standing, age, or other condition, as if he were infected with venereal disease until I had proved to the contrary. At that time I could not fully credit the statement and questioned the observation of the men who made it. I entered practice about ten years ago, in a town with an average population of 500, which for all practical purposes of this paper is an ordinary country village, isolated from the rest of the world and a great distance from any city. There was no house of prostitution in the township, and no public prostitute has existed within its borders since my residence there, but time and experience have convinced me that my teachers were right in their statement.

Syphilis is a terrible disease and is so recognized by the laity, while the great majority regard gonorrhea as a trivial affection. To my mind it is tenfold more terrible than syphilis, while both diseases cause untold suffering to innocent parties, and during my very limited experience I have seen several blind from the disease. The year I entered the town a young man from one of the best families graduated from one of our schools; a few years later, while on a business trip outside, he contracted gonorrhea, was treated and, as he supposed, cured by a frieend who had suffered several times in the same way. Soon after his return home he was married to a young woman whom I remember as a bright, robust, rosy-cheeked schoolgirl. Since then I have treated the man for stricture and his wife for all the evils following a gonorrheal infection of the pelvic organs. She is pale, anemic, a daily sufferer, and spends nearly a week out of each month in bed. Without children, in a beautiful home, she will drag out her life of misery and suffering.

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I believe much of the evil can be prevented and, as the acme of medical science is the prevention of disease, that this problem is pre-eminently one for the attention of the Association. It can not be left to the church, as she is unable to cope with it, and her influence, when brought to bear on this subject, has invariably been unsatisfactory. Churchmen are educated along different lines, seldom taught to differentiate fact from theory, or to reason from effect to cause, and they appeal largely to the sympathies and prejudices of those whom they would influence. Frequently, in times past, a few individuals have made a careful study of this phase of social life and succeeded in passing laws in some communities which have greatly mitigated the evils to which I have called attention, but the church has usually succeeded in sweeping them off the books.

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CIRCUMCISION IN RESTRICTING THE SPREAD OF SYPHILIS.*

HAROLD N. MOYER, M.D.
CHICAGO.

There is difference of opinion as to the mortality of the chief venereal diseases, syphilis and gonorrhea. The latter was, until quite recently, regarded as purely local, but after the gonococcus was identified and cultivated, it was found that general infections were frequently caused by this organism. Pleurisy, meningitis, myocarditis and peritonitis, and of late a gonococcemia have all been indentified. These considerations force the conclusion that gonorrhea is not the innocent local disease it was formerly thought to be, with complications largely of a mechanical nature, such as stricture, etc. There will probably be a widening conception of the disease-producing power of the gonococcus, since it has been recognized that, in common with other germs, its pathogenic power depends upon a toxin and not upon the germ itself. The observations of Young show that in many cases the gonococcus can be identified by cultivation when it has escaped detection by centrifugalizing fluids, spreading and staining.

Hyde and Montgomery, in their work on venereal disease, say that gonorrhea and its complications have a mortality greater than syphilis. We are quite sure that the neurologist will deny this. As a matter of fact, neither is in a position to judge the mortality of these affections in their true light. To the andrologist comes those complications of the genito-urinary tract with ascending infection of the urinary tract. These form a group that leads him to think that gonorrhea is one of the most deadly diseases that affects the human race. The acute cases that are cured and have no relapse, in his own practice as well as in that of others, do not return, and, hence, his experience largely deals with cases having severe and lasting complications. The neurologist, looking over his case books, finds the enormous incidence of syphilis in grave disorders of the nervous system, and comes to the conclusion that syphilis is one of the most deadly affections of the human race. The large number of cases that escape involvement of the nervous system do not come under his observation. The same thing is true of the operating gynecologist, who largely fails to see those cases which are not infrequent in practice, in which the gonococcal infection is followed by a comparatively slight reaction in the urethra or the vagina, and subsides without involving the tubes or the endometrium.

It is not profitable to argue as to the comparative deadliness of these two infections, when they are both responsible for so much preventable suffering. Their legal restriction has been attempted in other countries, and legislation has been proposed and at times initiated in this country, looking to a restriction of the venereal diseases. It is proposed to effect a sort of quarantine against infected individuals, giving the health authorities plenary jurisdiction in such cases. The system of inspection of houses of prostitution in continental cities and registration has been revolting to the Anglo-Saxon, and its efficacy in restricting the spread of gonorrhea is doubtful. An infected person may convey gonorrhea long after all local signs have disappeared, and even after microscopic examinations of the secretions fail to show the gonococcus. Hence mere inspection is of little value, while microscopic examination of [illegible] is impracticable because of the time required. Cultures would identify the germ if present, but these consume more time than the ordinary spread and stain. In restricting the spread of syphilis, inspection would be of value.

While the profession is studying the restriction of venereal diseases, I would especially call its attention to the literature bearing on circumcision. This operation is known to enormously lessen the case incidence of syphilis. It is free from risk, and does not inflict any disability on the individual; on the contrary, the operation is a decided gain, even if it had no influence in directly lessening the venereal diseases. It does away with phimosis, balanitis, and tends to prevent hernia and rectal prolapse, as well as a frequent train of nervous symptoms which follow a constricted and adherent prepuce.

A comparison of the condition of the glans and the preputial fold in those who have been circumcised and those who have not, reveals a striking difference. In the uncircumcised the ducts at the frenum become clogged with secretions, the mucous membrane of the glans is sodden and easily excoriated. Once a solution of continuity is formed in the epithelium, the retained secretions form an admirable culture-medium. It is surprising how few statistics there are bearing on this subject, but those that are at hand conclusively confirm the immense importance of circumcision in preventing the spread of syphilis. Jonathan Hutchinson[1] gives the following table showing the incidence of syphilis and gonorrhea in a series of hospital cases, one-third of whom were Jews.

	Total Venereal Cases.	Gonorrhea.	Syphilis.
Not Jews	272	107	165
Jews	58	47	11

Freeland[2] speaks of his experience with the Peninsular and Oriental Steam Navigation Company, as ship surgeon. He never remembers having seen a primary syphilitic chancre among the Lascar crews, who were invariably circumcised, while venereal diseases other than chancre were very common among the circumcised. He gives the following table to show the relative frequency with which primary infection occurs on the prepuce:

	No. of Initial Lesions.	No. on Prepuce and Furrow.	Percentage on Prepuce and Furrow.
Fournier	423	314	74.2
Clerc	325	234	71.6
Berkeley Hill	150	111	74.0

Perhaps it is too much to say that all of the 73 per cent. of cases which occur on the prepuce and in the furrow would be prevented by circumcision, but certainly a large proportion of them would, and the enormous reduction, even if it were estimated at 50 per cent., would so far lessen the case incidence of syphilis and the reduction of hereditary and accidental infections, as to make the universal adoption of this operation one of the leading hygienic factors in improving the physical condition of the race. It may be argued that there is some fallacy in these figures. In a recent number of the *Journal of Mental Science*,[3] it is stated that the proportion of general paralytics among the Jewish population of the London asylums is much larger than in other races. If we assume that syphilis is the chief factor in the production of general paralysis, we may well ask ourselves why, if this infection is less common among Jews, general paralysis should be more frequent?

Read before the Physicians Club, Chicago.

[1] Freeland: The Lancet, Dec. 29, 1900.
[2] Ibid.
[3] *October, 1900, vol. xlvi, No. 195.*

Several arguments might be advanced in support of the view that syphilitic infection is less common among Jews, and, at the same time, general paralysis is more frequent. It may be that those exciting factors that play such an important rôle in the production of general paralysis are relatively very frequent among the Jews A further possibility is that other forms of insanity are comparatively rare, thus reducing the total Jewish population of the asylums, but relatively increasing the number of paretics. In view of these possibilities, the argument loses its effect as against the prophylactic value of circumcision in preventing the spread of syphilis.

Many in our profession, realizing the disastrous effects of syphilis, have earnestly advocated the legal regulation of prostitution. In view of the doubtful efficacy of registration and examination, I would earnestly invite their attention to the figures contained in this paper. It is an operation that is simple, devoid of mortality or disfigurement, against which nothing can be said, and which has as a result, if universally applied, a lessening of the most disastrous of venereal diseases from 50 to 75 per cent. I earnestly hope that they will give attention to this matter, and throw the weight of their authority in favor of the operation. It is a practical means of reform, ready to hand, and its application is within the reach of every physician.

REPORT OF THE SPECIAL COMMITTEE OF THE SECTION ON STATE MEDICINE OF THE AMERICAN MEDICAL ASSOCIATION.

APPOINTED TO INQUIRE WHETHER AND WHEN THE GONORRHEIC MAY BE PERMITTED TO MARRY, AND WHETHER THE MATTER IS A PROPER ONE FOR REGULATION BY STATUTE.

The resolutions under which your Committee was appointed directed the following inquiry: 1. Whether the *gonorrheic* can be so treated and so far cured that he can be allowed to marry with safety to his wife. 2. If he can be so cured, what are the forms of treatment best calculated to cure, the period of time which should elapse and the physiologic reactions which will positively determine the question of his fitness?

QUESTIONS SENT TO GYNECOLOGISTS.

To the gynecologists who more than any others deal with the remoter and more serious results of the disease, the following list of questions was submitted: 1. What proportion of the cases of pelvic inflammation coming under your care are attributable to gonococcal infection? 2. In what proportion of these cases, if any, has infection resulted where the man had been pronounced cured by a competent physician after thorough treatment and careful bacteriologic examination? 3. In what proportion of cases in the female is gonorrhea curable so that the patient is no longer infectious? 4. In what proportion of cases is sterility traceable to gonorrheal infection?

Drs. P. D. Jacobs, of Brussells; S. Pozzi, of Paris; Prof. V. Czerny, of Heidelberg; Drs. Heywood Smith and Granville Bantock, of London; E. H. Grandin, H. J. Boldt, P. Sherwood Dunn and Paul F. Mundé, of New York; A. J. C. Skene, of Brooklyn; Barton C. Hirst, Charles P. Noble, J. M. Baldy and Joseph Price, of Philadelphia; J. W. Bovée, J. S. Stone and H. L. E. Johnson, of Washington; Ely Van de Warker, of Syracuse; W. D. Mann and C. C. Frederick, of Buffalo; J. F. Baldwin and F. F. Lawrence, of Columbus; W. H. Wathen, of Louisville; Hunter Robb and W. H. Humiston, of Cleveland; Joseph Eastman, of Indianapolis; Henry T. Byford and E. C. Dudley, of Chicago; A. Lapthorn Smith, of Montreal; James A. L. Ross, of Toronto; Emory Lanphear, of St. Louis, and H. Kreutzmann, of San Francisco, replied by letter, and by reprint, Dr. Reuben Peterson, of Grand Rapids. A reply from one New York gynecologist came unsigned, and while your Committee tabulated his returns, they have not been able to satisfy themselves of his identity.

Drs. Abraham Dudley, of New York; Henry O. Marcy, of Boston; E. E. Montgomery, of Philadelphia, and Professor Leopold, of Dresden, acknowledged the receipt of the questions, but excused answering them on the ground of the press of other work. Dr. Marcus Rosenwasser, of Cleveland, in a letter, in which he stated that he had so far kept no tabulated record along the lines of the inquiry suggested by the Committee, made the suggestion that gynecologists keep an especial record for one, two or three years from now on with a view of answering such questions, the diagnosis in each case to be corroborated by microscopic or bacteriologic test, concluding that a collective report along such lines would, in his judgment, furnish data from which approximate conclusions could safely be drawn.

QUESTIONS SENT TO GENITO-URINARY SPECIALISTS.

To the genito-urinary specialists the following list of questions was sent: 1. Is gonorrhea curable—so curable that the physician can confidently say to his patient: "You may marry now. You run no risk of infecting your wife?" 2. In what proportion of cases is it so curable: *a*, in anterior urethritis; *b*, in posterior urethritis? 3. What methods of treatment in your experience give the most prompt and certain results: *a*, in acute cases; *b*, in chronic cases? 4. What period of time should elapse after the disappearance of the last evidence of the presence of the gonococcus before the patient should be allowed to marry? 5. Upon what tests do you rely in order to determine positively whether the patient is wholly free from the gonococcus and is no longer infectious?

Replies have been received from Professors A. Neisser, of Breslau; E. Fuerbringer, of Berlin; H. Feleki, of Budapest; N. Jadassohn, of Berne; E. Burkhardt, of Basel; E. Finger, of Vienna; S. Rona, of Budapest, and P. Tommasoli, of Palermo; Drs. J. Verhoogen, of Brussels; J. de Keersmaecker, of Antwerp; Charles Audry, of Toulouse; A. Guepin, and P. Nogues, of Paris; Charles W. Cathcart, of Edinburgh; Gardner Allen, of Boston; Eugene Fuller, Herman Klotz, James P. Tuttle, Edward L. Keyes, Charles H. Chetwood, Ramon Guitèras, and George E. Brewer, of New York; H. M. Christian, William White and Edward Martin, of Philadelphia; Roswell Park, of Buffalo; William T. Corlett, of Cleveland; William Judkins and A. Ravogli, of Cincinnati; G. Frank Lydston, Joseph Zeisler and W. T. Belfield, of Chicago; C. E. Burnett and Bradsford Lewis, of St. Louis, and George Chismore, of San Francisco. Drs. Max Melchior, of Copenhagen, and Orville Horwitz, of Philadelphia, replied by reprints.

EFFECTS OF GONORRHEA ON THE FEMALE.

The portion of the work assigned to Dr. Dickinson was greatly delayed by her necessary absence abroad, and the returns have come in only partially, and not in time for anything like complete collation. The questions submitted were as follows: What are the effects of gonorrhea on the female? 1. Are the vulvovaginal and periurethral glands infected? 2. Are the urethra, bladder, ureters and kidneys infected? 3. Is the rectum infected 4. Is the myometrium infected, cervical and corporeal? 5. Is the endometrium infected, cervical and corporeal? 6. Is the endosalpinx infected? 7. Is the pelvic peritoneum infected? 8. Are the lymphatic vessels and glands which drain the genitals and rectum infected? 9. Is there any affection of the joints single or multiple? 10. What are the other effects? 11. Should gonorrhea be recognized by statute and, if so, what should be the substance of the law?

The answers to questions 1 to 10, inclusive, are simply corroborative of the answers to the questions submitted by the chairman to the gynecologists. Most simply answer "yes," but Winslow Anderson, of San Francisco, gives his reply in percentages, as follows: 1. The vulvo-vaginal glands and Skene's glands of the urethra are infected in fully 75 per cent. of my cases. 2. The urethra is infected in about 40 per cent., the bladder in 10 per cent., the ureters and kidneys in about 2 per cent. 3. The rectum is infected in about 2 per cent. (Lydston, and one other who forgot to sign his name, qualify by stating that this occurs only in perverts where coitus is practised per rectum.) 4. The myometrium, cervical and corporeal is infected in about 50 per cent. of cases. 5. The endometrium, cervical and corporeal is infected in about 90 per cent. of untreated cases. 6. The endosalpinx is infected in about 25 per cent. of untreated cases. 7. The pelvic peritoneum is infected in about 25 per cent. of untreated cases. 8. The lymphatics are infected in 25 per cent. 9. The joints are infected in from 1 to 2 per cent. of my cases. 10. The other effects are septic absorption, which destroys the red blood-corpuscles, causing leukemia, and septic anemia with deterioration of the red blood-corpuscles and hemoglobin. (Newman adds: "Sterility, ophthalmia neonatorum, etc."; Canney, "sterility, endometritis"; Harsha, "sterility more or less permanent, endocarditis, fixation of uterus and adnexa, etc."; Orendorf, "invalidism and sterility"; Burr, "endocarditis"; Matos, "all the serosæ, pleura, peritoneum, meninges, etc."; Steele, "resulting sterility and relapsing invalidism," and Kales, "perioöphoritis as well as the conjunctiva of the patient herself or her new-born child if she has one. The latter infections I hold to be of considerable medicolegal importance.")

VIEWS OF THE GYNECOLOGISTS.

1. *Pelvic Inflammation and Gonococcal Infection.*—In reply to the question as to the percentage of pelvic inflammation traceable to gonococcal infection, there seems to be a very wide diversity of opinion among gynecologists. The widest is between Van de Warker, who in forty years has seen but two cases where gonorrhea invaded the tubes; Bantock,[1] who sees no reason to change his views expressed in a paper read before the Section of Obstetrics, Medicine and Gynecology, at the annual meeting of the British Medical Association, in Birmingham, July, 1890; Cathcart, who, after 4½ years' work in the Lock wards of the Edinburgh Royal Infirmary, maintains that "the majority of those who have suffered from disturbances of the menstrual function have not been affected more severely than one expects to find in a similar number of women who lead regular lives," although he admits that "there certainly have been a few cases of undoubted salpingitis and ovaritis"; and Humiston, who finds that, "without classifying doubtful cases as gonorrhea, 90 per cent., at least, of pelvic inflammatory troubles are attributable to gonorrhea, the infection being usually of a mixed character—gonococcal with some one of the pyogenic micrococci," and Joseph Price, who says that in over one thousand sections for pelvic suppuration, 90 per cent. were traceable to gonorrheal infection, and that 90 per cent. of those histories are reliable and clear. Czerny regards it as impossible to tell. Boldt estimates from 5 to 8 per cent., admitting it a guess. Ten per cent. is the estimate of Skene, Robb, Eastman and Bovée. Dunn gives the same percentage for private cases, and Jacobs—5000 private cases—gives 10 to 12 per cent. Johnson says "a large majority"; Wathen, "nearly all of the cases"; Byford, "in majority," and Mann, "nearly all" of those who have not borne children; Heywood Smith, differing from his English confrères, finds many cases of salpingitis and ovaritis due to gonococcal infection, and Barton Hirst also finds the number large. The estimate of Pozzi and Frederick is 75 per cent.; 60 per cent., that of Lapthorn Smith and Stone; 50 to 75 per cent., the estimate of Baldwin; 50 per cent., that of Watkins and Lawrence; Ross, 30 per cent., omitting sepsis following labor, and Noble, while giving 50 per cent. as his estimate, is under the impression that it is too low. Dunn finds 33 to 55 per cent. in charity hospital work; Lanphear, not to exceed 25 per cent., excluding prostitutes; Kreutzmann, at least 33 per cent.; Baldy, 33 per cent.; Grandin, 20 per cent.; Jacobs—7000 cases—18 per cent., in polyclinic cases. E. C. Dudley, while giving no estimate as to percentage, has found not infrequently the gonococci in the tubes removed.

Diverse as these estimates are, the weight of evidence bears unmistakably toward the conclusion that gonococcal infection is a very considerable factor in the causation of the inflammatory diseases of the pelvic organs in the female, and that, as Peterson aptly remarks,[2] "the more the disease is studied in women, and the greater the improvements in bacteriology, the higher is to be found this percentage."

2. *Infection from Patients Pronounced Cured.*—As to the second question regarding infection by men where the cases had been pronounced cured after thorough treatment and careful bacteriologic examination, a large majority responded that they have no data. Baldwin knows of but few instances where such examination has been made, but one such was followed by prompt infection. Mann knows of but two cases; Jacobs gives 2 to 5 per cent.; Eastman, 5 per cent.; Noble recalls three cases; Hirst has seen it recur a number of years after the man was pronounced cured. E. C. Dudley does not estimate the proportion, but states that many wives of such men have salpingitis. The gonococcus is not uniformly found; it may never have been present, or other germs may have taken its place. Wathen states that many are so infected, but that physicians seldom make correct examinations, hence their opinions are not reliable. Byford finds the infection usually from recent cases or complicated old ones. Lanphear has known a large number of infections where the man has not waited long enough, and where no bacteriologic test had been made. Humiston, while giving no estimate, inquires, very pertinently: "How many physicians do make careful bacteriological examinations?" Price says: "In a large percentage—over 50 per cent., in married women"; Lawrence, "Very difficult to determine, but probably about 20 per cent." Jadassohn states that when, after thorough treatment and repeated and thorough bacteriologic examinations, he has concluded that a *man* is cured *and, as he has often done, has* permitted marriage, he has never come to know of a single infection that has taken place following the marriage. Finger, likewise says: "With a very extensive" —genito-urinary— "*practice and numerous candidates for marriage* I have, as yet, seen no case where a person, permitted to marry as cured, has infected his wife." Frederick says: "I do not know that I have ever known of infection after thorough treatment and the culture tests have been negative; most men, as you know, are pronounced cured when the discharge ceases. If your report can in any way lead the general profession to more fully realize the injustice they are doing by their careless and incomplete treatment of these cases and by the consent to marriage and to intercourse, not having proven that the man is cured, you will merit the praise of all womenkind."

3. *Curability of Gonorrhea in the Female.*—As to the curability of gonorrhea in the female, so that the patient is no longer infectious, there is also a wide diversity of opinion. Johnson says the proportion is very small—"once a clap, always a clap"; Bovée, 5 per cent.; Lapthorn Smith thinks that none are absolutely curable, but in the course of time the infection dies out—the gonococcus kills itself with its ptomains —in all cases. Frederick says: "I have never seen one whom I felt sure was absolutely cured; if we could know all the subsequent history of women after we had treated them we might find that some were cured. I have known men to be infected by women whom I had treated thoroughly and for a long period, thinking them cured. Some men in a sense become immune to gonorrhea. I have known a man to cohabit with a woman for years without infection, and another was infected at the first intercourse with this same woman." Noble regards it as a matter of great difficulty to positively eradicate gonorrhea in the female. Pozzi regards it as "very often" curable. Dunn says: "Where the gonococcus has not invaded the tubes they are all curable." Skene regards all cases as curable where the disease has not reached the body of the uterus and oviducts. Lawrence says: "All if proper treatment be instituted early." Byford considers nearly all as curable "after a long time." Ross says: "No reason to believe that there are any incurable cases in this sense so far as danger of infection of the male goes. While the disease may spread up into the tubes and ovaries and may produce incurable disease in these I am firmly convinced that the vagina remains no longer infectious." This is corroborated by E. C. Dudley, who says: "Many widows who have had gonorrhea from the first husband fail to infect the second husband. I do not recall a case in which a man was infected in consequence of marriage with a widow. If the danger were very great I think more men would suffer. Why should not a man marrying such a widow be as liable as a woman marrying a man with a gonorrheal record?" Watkins believes that nearly all cases are curable "if treated early, actively and especially during the first one or two mentrual periods following the infection"; Wathen, "in nearly every case"; Baldy, "100 per cent." Van de Warker has always found the duration of the disease short and more tractable in women than in men, while Hirst thinks "gonorrhea is apt to remain latent in the female and to be infectious for a long time." Boldt says, "it is curable in nearly all cases and I believe in all if thoroughly and patiently cared for." Grandin states "that if seen in the acute stage, e. g., after infection of uterus, cure doubtful." Robb believes "that all cases if properly treated and if kept under the observation of a competent physician can be cured." Kreutzmann regards it "absolutely curable either with conservative treatment or *radical operative procedures.*" *Humiston's opinion* is that "every female can be freed from gonorrheal infection by proper procedures, the vagina and uterus readily, the Fallopian tubes and the Bartholini glands may require complete extirpation." Price says: "Incurable if the diseased uterus and appendages remain. Infection rarely occurs after prolonged treatment of vagina and mucous membrane," and Jacobs concludes as follows: "In the vagina gonorrhea is easily curable, in the cervix with difficulty, in the uterus and peritoneum, incurable except by radical operation." It is Audry's opinion that "in a general way in the case of a woman one can express a great probability in favor of a cure, but one never has a certainty thereof; for the duration may be indefinite, the latency absolute, and the infection manifest quite formidable habits of reviviscence."

4. *Gonorrheal Infection and Sterility.*—As to the extent to which sterility is due to gonococcal infection, Pozzi

says: "It is impossible to say"; Van de Warker states that "the results of an investigation once carried on were negative." Of those giving percentages, Dunn's estimate is the lowest, viz., 3 per cent.: A. Lapthorn Smith estimates 12 per cent. due to the man's gonorrhea, and 21 per cent. due to the wife's. Jacobs gives from 20 to 21 per cent.; Skene, Grandin and Boldt estimate 33 per cent.; Bovée, 40 per cent., as also does Ross; Stone, Lanphear, Price, Frederick and Mann give 50 per cent.; Noble, 66 per cent.; Eastman and Baldwin, 75 per cent.; E. C. Dudley, Byford, Johnson, Watkins, Wathen, Boldt and Heywood Smith, without giving any definite percentages, regard the number as very large. Hirst and Robb regards it as the rule where infection has occurred. Humiston and Kreutzmann say that sterility results in every case where ovaries or tubes are attacked, and Czerny believes that "certainly in half the cases the sterility of the woman is to be traced to the husband's gonorrhea."

VIEWS OF THE GENITO-URINARY SPECIALISTS.

1. *Curableness of Gonorrhea.*—As to the first question propounded to the genito-urinary surgeons, viz., whether gonorrhea is so curable that the physician can confidently say to his patient: "You may marry now, you run no risk of infecting your wife," they have without exception responded "Yes." Some of them, however, qualified their answers to a certain degree as follows:

Lydston said: "In the majority of cases"; Chismore, Fuller and Verhoogen, "In the great majority"; Park, "In the majority of cases if the disease is not too extensive"; Ravogli, "If organs which can not be reached by instruments be not involved"; Zeisler, "That depends on a variety of conditions which are not always controllable by the physician"; Allen, "But we can not certainly predict recovery at the outset in any given case"; Audry, "If the physician attends to it diligently and the patient is willing to care for himself as required and for as long a time as is necessary"; Feleki, "Only a small percentage must, in consequence of the uncertainty of the duration of their infectiousness, or in consequence of serious complications, be looked upon as incurable. I estimate this proportion as about 3 per cent."; Guepin, "Gonorrhea (gonococcal urethritis) is curable, but not more so than syphilis, and like it, the physician can never say to his patient that he is absolutely cured"; Jadassohn, "Not curable in such a sense that the physician can indeed undertake to guarantee that no infection will result therefrom, but so that in good conscience he can give an assurance that in all human probability infection is now excluded."

2. *Curableness of Urethritis.*—With regard to the second question, the relative curability of anterior and of posterior urethritis, there is considerable diversity of opinion as to the exact percentage, but a general agreement as to the curability of a great majority provided proper treatment be instituted early and persisted in until the evidence of cure is complete. Finger states that "all are curable." "I have," he says, "as yet seen in my practice no condition in which, with earnest determination on the part of the patient, it has not been possible to bring about a cure." But he also says, "I always follow this principle rigidly; when a patient does not obey my injunctions and take the treatment of the disease seriously; when warnings do not bear fruit, I positively decline to treat him further." Keyes and Chetwood, Belfield, Lydston, Chismore, De Keersmaecker and Audry maintain that practically all cases are curable in so far as infectiousness of the man is concerned, it being understood that time enough is allowed to effect a cure. Fuller expects all to be cured except where tuberculosis or extensive involvement of glands coexist. Burnett says, "100 per cent., if gonorrhea alone be present"; White, "Nearly all"; Martin, "95 per cent. certainly"; Judkins, "85 per cent., but somewhat less in posterior urethritis." All cases of anterior urethritis are regarded as curable by Guitêras, Christian and Tuttle. Klotz regards posterior urethritis not less amenable than anterior, provided the deeper glandular appendages or adnexed organs be not involved; in a large majority of cases both are curable; likewise Allen notes a large majority as recovering, but more in cases of anterior than in posterior urethritis. Feleki finds 2 to 3 in 1000 of anterior urethritis incurable, and from 26 to 28 in 1000 of posterior urethritis. Rona says: "The majority of uncomplicated cases of total as well as anterior urethritis": Verhoogen, "Anterior urethritis always curable, posterior urethritis with greater difficulty." Neisser gives a good prognosis in anterior urethritis, a less favorable one in posterior. Burkhardt says he sees no acute cases whatever, but in 256 cases of chronic urethritis—all of posterior or total urethritis—reports 245 complete cures. Christian regards a small proportion of chronic posterior urethritis as incurable owing to the involvement of the seminal vesicles and prostate. Guitêras estimates 98 per cent.; Cathcart regards it as most obstinate; Tuttle and Corlett estimate 60 per cent., while the latter estimates 80 per cent. in anterior urethritis. Lewis gives from 80 to 90 per cent. of both, provided that there be no serious complications, but he believes that posterior urethritis is present in the great majority of cases of prolonged gonorrhea, and that it is not properly to be considered a complication, but a natural phenomenon of gonorrhea. Tommasoli gives 93 per cent. in anterior, 80 per cent. in posterior urethritis; Zeissler and Fuerbringer give the lowest estimate, the former holding that a majority are cured in anterior, and a minority in posterior urethritis, and the latter giving 50 per cent., and far below 50 per cent., respectively, as his estimate. Jadassohn, speaking of these complicated cases, says: "I personally know of no case where that"—the disappearance of the gonococci—"has not been accomplished, where the patient has not prematurely and arbitrarily interrupted the treatment."

There is no uncertainty therefore in the statement of these physicians, the weight of testimony is unquestionably in favor of the position which has heretofore been publicly taken by one member of your committee, viz., that gonorrhea is a curable disease, curable in every stage, and in a large majority of cases, provided only that the physician exercises due diligence and skill, and the patient cheerfully submit himself to treatment and for a sufficient length of time.

3. *Treatment.*—It is not possible, within the limits of this report, to do even scant justice to the various and accurate details regarding treatment given by your correspondents, some of whom have furnished your Committee with very carefully prepared and full papers. Suffice it to say that broadly speaking they may be divided into two classes: those who employ the Janet method in one or another of its modifications, and those who do not. Whether they employ it or not, these diverse schools of genito-urinary therapeutics all agree upon one point, viz., that the disease is curable if treated patiently, intelligently and persistently, adapting the means to the pathologic condition of the urethra and its adnexa, and to the constitutional idiosyncrasies of the patient. Finger "can not recommend Janet's method of irrigation," but recalls no case of failure to cure. Feleki, who in the very earliest stage uses the urethroscope and through it pencils the affected part and afterward the entire anterior portion of the urethra with a 3 per cent. solution of nitrate of silver, recalls only two or three failures in a thousand in the anterior urethra: Jadassohn, who says that "irrigations . . . without catheters according to Janet's method seem to afford no special advantages, on the contrary often occasion increase of irritation," further says, "the duration of the treatment seems to me the chief factor in all cases and especially those chronic cases in which the tendency is to relapse whenever the treatment is suspended."

On the other hand, Nogues, De Keersmaecker and Verhoogen, claiming the same results as to final cure, are enthusiastic advocates of free lavage with permanganate of potash in the acute stage. All agree that the involvement of the glands of Littre, of Cowper, of the prostate, and of the seminal vesicles, constitute complications requiring especial, prolonged and patient treatment with injections, sounds, dilatations, massage, internal urethrotomy, or even, in some cases, external urethrotomy to effect a cure.

4. *Duration of Gonorrhea.*—As to the question of time limit, Martin, Park, Czerny, Chismore, Fuller, Lydston, Nogues and Corlett mention one year as the proper interval after disappearance of the last gonococcus. Fuerbringer says several months. Six months is Cathcart's limit. Three to six months is the time stated by White, Judkins and Burkhardt. Christian says four to six months; Lewis, three to four; Guitêras, Allen, Jadassohn and Rona, three months. Six weeks to six months from the time the urethral mucous membrane is normal is Burnett's rule. Ravogli prescribes four to six weeks. Guepin's opinion is: "The longer the better." Audry directs three or four weeks in ordinary cases; if, however, there be a slight secretion of the urethra, but without pus, he extends this period to six or seven weeks, but in case the urethritis shows a well-marked purulent secretion, although gonococci have positively disappeared, he requires a period of several months or more, "that is, a lapse of time indefinite, if not infinite." Feleki sets no time limit, but is governed by the absence of pus cells. Tommasoli mentions two to three weeks. De Keersmaecker and Verhoogen judge by the absence of all signs after the usual tests, and Neisser regards the time as a secondary consideration to the fact of demonstrated presence or absence of the gonococcus.

5. *Determination of Cure.*—There is a substantial unanimity in the replies respecting the tests necessary to determine the question whether the patient is no longer infectious. All agree that the examination should be searching, thorough and repeated; that the discharge of the anterior urethra, the posterior urethra, the prostatic secretion and that of the seminal vesicles should be examined separately, and that only on the basis of repeated negative examinations, conducted over a considerable period of time, should the conclusion be reached that the patient is no longer infectious. Jadassohn, however, does not regard beer test and the cohabitation test as necessary to an accurate result, while Cathcart would not recommend illicit intercourse, not considering it justifiable under any circumstances. Most all insist on the absence of pus cells as well as of gonococci. Nogues, Guepin, Feleki, Tommasoli and Lydston in particular call attention to the importance of other pyogenic germs. "The fact is," says Feleki, "that we see cases where men in whom the gonorrhea, from the standpoint of the gonococcus, can be pronounced as positively cured, infect their wives, where nevertheless neither in the man nor in the woman can gonococci subsequently be demonstrated," and further, he says, in regard to such cases, "I hold it as out of the question for the patient to infect his wife with gonorrhea, but in the presence of secretion containing pus, I regard it as possible that the wife can acquire from this husband an infection which is not gonorrheal in character." Nogues says: "Microscopically I do not go so far as to require the absence, in toto, of leucocytes—a thing which is practically impossible, but it ought to be so that they are found only occasionally, and that they be not accompanied by altered epithelium. I must repeat this, that I require the absolute asepsis of this drop"—the "morning drop"—"but I attach a very great importance to this also, that the state of asepsis has not been disturbed by a single attack of secondary infection for a very long time—a year at least." Lydston says: "A patient is dangerous so long as a trace of purulent discharge is present whether the gonococci be present or not; it may not convey gonorrhea, but it is capable of producing non-specific inflammation in a healthy woman which may at any time cause serious pelvic results." Tommasoli is the only one who does not insist on following out these prolonged tests to determine, as positively as can be, the absence of the gonococcus. His reasons are: "1, because bacteriological examination for the gonococcus in chronic urethritis is too deceptive and not sure; 2, because I recognize that there may also exist infective urethritis, acute or chronic, even without gonococci . . . and I do not believe that it is possible in every country to compel the patient to submit to those repeated, multiplied and tedious trials to which Professor Neisser subjects his patients. In my country, where the vivacity and the impatience of patients is such an extreme item, no specialist, I believe, will be able to follow the rules of the school of Breslau, even though he believe them extremely useful." Guepin maintains that "in order to say that the patient is cured it is absolutely necessary that the urethral discharge shall no longer contain a single pathogenic microbe; that the urinary filaments be no longer purulent, and, *a fortiori*, no longer infected; that the products of the submucous urethral glands (glands of Mery in particular) and submuscular (prostate, seminal vesicles) should be normal; the semen ejaculated should also be examined. That methodical examination done after the patient, cured to all appearances, shall have resumed his customary life, while it is of great prognostic value in the majority of cases, still does not warrant the affirmation that the spontaneous reappearance of gonococci is impossible." Neisser sums up the matter as follows: "We do not to-day possess any test or tests which enable us to declare with positive certainty that the patient is wholly free from the gonococcus. When considered from a practical rather than a purely academical standpoint, however, our present methods of examining and 'testing' the patient are such as to deserve our entire confidence, and when these have been carried out in a thorough, careful and intelligent manner by one skilled in their use. the obtaining of a clear negative result will justify the physician in saying to the patient, 'You may now marry; as far as I am able to judge, you will not infect your wife.'"

GONORRHEA AND THE LAW.

The response to Question 11, of Dr. Dickinson's list, shows a pretty evenly divided sentiment as to whether legal restriction should be attempted or not. Winslow Anderson says: "I look upon the sequelæ of gonorrheal toxemia as the most serious complication with which the gynecologist and abdominal surgeon has to deal and something should be done to check the disease, but those who advocate legal restriction are by no means agreed on the best method." Most of them would have rigid and regular inspection of prostitutes, with license of houses of prostitution according to the European fashion. Ridlon would make the wilful transmission of the infection a criminal offense. Steele, Burr and Orendorf would deny license to marry to persons suffering from gonococcal infection. Newman, with a keen recognition of the complexity of the problem, writes: "Laws should be so framed as to secure ample protection to all innocent persons, both women and their offspring, and should be formulated by a committee composed of representatives of both medical and legal profession." On the other hand, Harsha says: "Impracticable to regulate by statute"; Whery, "No. To do so would lead to blackmailing and many social disasters. It is the medical profession and not the law that should repress it." Matos says: "While the gravity of gonorrheal infection justifies its recognition by law, I do not believe that the time is opportune for legal recognition; the subject must still be left in the hands of the profession and to the gradual education of the people to its importance"; Lydston, "I do not believe any statute bearing on gonorrhea would be practical"; Edmund Andrews writes: "In general terms some useful legislation is possible, at least theoretically, but the well-known impossibility of enforcing a law under our present corrupt civil service which has not a strong, watchful and almost unanimous public sentiment sustaining it, renders a good result practically hopeless at the present time. The often suggested plan of having persons appointed to examine physically all candidates for marriage and to decide on their permission would, in our present defective means of keeping examiners above the reach of bribery, blundering and partiality from other motives, wreck any such statute in five years." And, finally, Kales admirably sums up the reasons that prompt so many earnest and honest men to oppose any statutory regulation of the evil, as follows: "Such a serious variety of infections as those listed and known to be propagated by irregular sexual relations may seem to call for legislative interference, or, at least, regulation. Better no law than one which is not or can not be enforced. Public approbation is necessary to the enforcement of such laws. The legal aspect of the question might be divided into: *a.* Laws dealing with domestic immortality. *b.* Laws relative to public immorality.

a. Perhaps the most important laws would be those which aim to protect the innocent woman, or mother, from infection in her marriage relations with her husband. 1. She may be unfortunate enough to marry a man who has an uncured gonorrhea or syphilis and thus either disease is communicated with all its attendant misery. 2. Or she may receive the infection from her husband in later years owing to his dissolute life.

b. Laws which refer to public immorality or prostitution aim to get at the probable sources of infection. Such laws have been in operation in certain countries for many years. The very general opinion is that they have failed, though enforced with the rigor of European police methods.

The times seem foolishly to call for laws which shall suppress or regulate every evil, and these laws are usually impotent according as they are numerous. Their non-enforcement develops lawlessness, and their irregular enforcement is oftentimes a matter of bribery or blackmail. The evils thus developed by over-legislation are often worse than a continuance of the evil legislated against. I should not add a single new law to the statutes, except to amend those which facilitate divorce, and if venereal disease be transmitted, divorce. damage or other penalty should be obtained without unnecessary delay or publicity. Such hearings might be before a judge, and jury of physicians, or laymen and physicians. As regards laws regulating prostitution, I would have none. The general public needs education on venereal and sexual matters by able physicians. It is rare in family practice that the opportunity to give this advice is not afforded one. Advice of this kind should be wholly personal and private, but such counsel usually spreads in the same personal and private manner from one confidant to another and ultimately does much good. Public advice of this kind simply excites morbid sensibility while a confidential interview does much to enable one to get the better of individual weaknesses with no loss of self-respect."

It must be manifest to any one competent to weigh evidence that a disease which is responsible for so large a proportion of pelvic inflammatory diseases and sterility in women is an ailment which demands our conscientious care and earnest consideration as to the best method of stamping it out. We can not but regard it as one of the more serious diseases that affect humankind—all the more serious in that its graver consequences are usually so remote that the connection between cause and effect has not as yet impressed itself upon the minds of the laity, or even of the medical profession as a whole. Worse yet, the cities teem with advertising quacks and the druggists' shelves are stocked with advertised nostrums that claim to quickly cure this disease so serious in its consequence and so intractable in a considerable proportion of cases. The first duty, then, of the profession in this regard would seem to be to impress the gravity of the disease on the minds of their patients, so far as possible, and, as opportunity offers, on the minds of the public generally. Young men should be taught authoritatively that a man with an uncured gonorrhea is a man dangerous to himself, to his family and to the community; that no acquisition to the "wild oats" period, not even syphilis, is likely to be so fraught with serious results to them and to their families in after life. Whatever may be the outcome of syphilis to the individual, under a proper course of treatment and in a period of time fairly well determined, he may marry with a reasonable prospect of having fairly healthy children, and of not infecting his wife. Moreover, a syphilitic expects to undergo from eighteen months to two and a half years' treatment before he is wholly cured, and submits to it willingly. But with gonorrhea, unless a patient knows by the actual determination of the physician, that the very last gonococcus has been dislodged from his urethra and the glands and organs in connection therewith, he is liable to infect his wife with an inflammation that may cost her her ovaries and tubes, if not her life, and the least penalty that it is likely to entail upon her is hopeless sterility. The sooner these facts are known to young men, and parents, and young women the greater will be the incentive to self-control on the part of young men, the greater will be the reluctance of parents to consent to the marriage of their daughters to men whose characters are not clean, and the more willing will those be who are so unfortunate as to have contracted the disease to submit to the treatment necessary to effect a complete cure.

Your Committee would emphasize the necessity of every physician treating every case of gonorrhea seriously, treating it thoroughly from the beginning, treating it with all the appliances which modern science places at his disposal, and not discharging the patient as cured until every evidence of pyogenic process in the secretions of the urethra or of the adjacent glands has disappeared. The members of the profession should also do their best to enlighten their clientele regarding the serious dangers involved in the use of nostrums prescribed over counters by druggists and *sold from* their shelves and advertised in the newspapers—nostrums which profess to cure this disease rapidly and completely. The fact should be emphasized that the disease is not necessarily nor even probably cured when the visible discharge and the burning have ceased; that just at that time it may be taking on its most insidious, chronic and intractable form; that just at that time, when the discharge has apparently ceased, is the time it is essential to know positively from a competent man whether the cure is apparent or real, whether there be any disease remaining in the deeper urethra, its glands, or the organs connected *therewith*.

Aside from the question, whether or not a physician can be legally required or even allowed to report a case of venereal disease, *it* is doubtful in the minds of your Committee whether any plan of examination of prostitutes or any plan requiring a report to health authorities of cases of gonorrhea occurring *in the* hands of general practitioners and specialists can be *made* practicable. The lesions of syphilis are visible to the naked eye, they are obvious, they can be *inspected*; the gonococcus, however, is microscopic and elusive—so elusive that a person may be infectious and yet half a dozen careful examinations may fail to demonstrate the presence of a single one. While it would be easy enough to demonstrate the infectiousness of a person in the acute *stage*, it is not through cases in the acute stage that infection is chiefly spread, but from cases which suppose themselves well, hence it is that the only hope we have of suppressing the spread of the gonococcus is by cultivating a general intelligence regarding the danger and the insidiousness of the contagion, and by never discharging a patient from our hands as cured until, after the use of all the means that science has placed at our command, we can say positively that in all human probability *he is no* longer infectious. Then, and only then, can consent to his marriage be given.

The thanks of the Committee are due to our colleagues in the profession who have so cordially responded to our questions, and to Drs. William Conrad, E. J. Rose, A. Pasini and A. Ravogli for their kindly aid in the translation of the manuscripts in German, French and Italian.

Respectfully submitted,
L. B. TUCKERMAN, Chairman.

REPRINTS AND PUBLICATIONS RECEIVED.

1. On the Importance of Gonorrhea as a Cause of Inflammation of the Pelvic Organs. By George Granville Bantock, M.D., F.R.C.S. Ed. British Med. Jour., April 4, 1891.
2. Four and a Half Years' Work in the Lock Wards of the Edinburgh Royal Infirmary. By Charles W. Cathcart, F.R.C.S. Ed. and Eng. Edinburgh Hospital Reports, vol. v, 1898.
3. Le Traitement de l'Uréthrite aiguë Gonococcique, par le Dr. de Keersmaecker. Annales de la Société de Médicine d'Anvers, March, 1897.
4. L'Urétrite Chronique est-elle Curable? Par le Dr. de Keersmaecker. Anvers.
5. Du Rétrécissement de l'Urèthre. Phase Terminale de son Traitement. Par le Dr. de Keersmaecker. Annales de la Société de Médicine d'Anvers.
6. Traitement Abortif *de l'Uréthrite Gonococcique.* Par le Dr. de Keersmaecker. Communication faite à la quatriéme session de l'Association francaise d'Urologie. Paris, 1899.
7. Expose des principaux Travaux Scientifiques de A. J. Guépin. Paris, 1898.
8. Recherches sur l'Etiologie de l'Hypertrophie Sénile de la Prostate. Par le Dr. Jean Rilliquet. Paris, 1900.
9. Wanneer is de uretritis gonococcia van den man genezen door Dr. de Keersmaecker, Handelingen van het derde Vlamsch Natur-en Geneeskundig Congres, gehouden et Antwerp op 24 September, 1899.
10. Ueber die Behandlung der Gonorrhoe mit Ichthyol. Von Dr. Jadassohn, Deutschen Med. Woch., 1892.
11. Ueber die Behandlung der Gonorrhoe mit Argentum-Casein (Argonin). Von Dr. J. Jadassohn. Archiv für Derm. u. Syp., Wien und Leipzig, 1895.
12. *Beobachtungen über Prostatitis.* Von Dr. Max Melchior, Kopenhagen. Montasberichte über die Gesammtleistungen auf dem Gebiete der Krankheiten der Harn—und Sexual—Apparate. Bd. v, No. 1, 1900.
13. The Treatment of Gonorrhea in the Female. By A. Ravogli. Medical News, Nov. 18, 1899; A Few Practical Points in the Treatment of Posterior Urethritis. By Dr. A. Ravogli, Cincinnati, Ohio.
14. Gonorrhea in Women. By T. J. Watkins, Chicago.
15. The Rôle of the Posterior Urethra in *Chronic Urethritis*. By Bransford Lewis, Saint Louis. N. Y. Med. Record. 1893.
16. Some Points of Interest in Connection with Chronic Urethritis. By Orville Horwitz. Therapeutic Gazette, *Feb. 15, 1900.*
17. The Treatment of Chronic Posterior Urethritis Causing Intermittent Gleet. By H. M. Christian. Therapeutic Gazette. Aug. 15, 1898.
18. The Contagiousness of Chronic Urethral Discharges. By George Emerson Brewer. N. Y. Jour. of Cut. and G.-U. Dis., March, 1891.
19. A Consideration of Some *Disputed Points* in the Etiology, Diagnosis and Prognosis of Gonorrhea. By George Emerson Brewer. Am. Med.-Surg. Bul., Feb. 1, 1895.
20. The Value of Bichlorid of Mercury in the Treat*ment of Urethritis*. By George Emerson Brewer, *New York*, 1891.
21. The Prevention of Pelvic Diseases. By Reuben Peterson. Jour. Am. Med. Assn., Dec. 18, 1896.
22. Gonorrhea and Its *Control*. By J. F. W. Ross, Toronto, Canada. Annals of Gyn. and Ped., November 1897.

PURULENT OTITIS—ITS TREATMENT AND PREVENTION BY THE FAMILY PHYSICIAN.

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The scope of the present paper is defined exactly by its title. It is to present to the practitioner the teaching of modern otology regarding a very important disease, for acute purulent inflammation of the middle ear is so common that the majority of cases, at least among children, are seen by the general practitioner, and not by the specialist. Frequent experience has shown me that the form of *treatment* which progressive otologists have recognized as the best and safest has not yet been adopted by all general practitioners. Yet it is so much simpler than the less efficient methods so often employed or advised by physicians. It is but the application of ordinary surgical principles to purulent inflammation localized *in the* ear. Just as in the preantiseptic days, wounds did heal after a fashion, so in incorrectly treated cases purulent otitis will often heal, but delays and unfortunate accidents are much more common. Many an ear and occasionally a life is lost which a little care on the part of the attending physician would have saved.

The diagnosis of acute purulent otitis is very definite. Sudden earache with some feeling of fulness and moderate deafness leave but little doubt as to the diagnosis. The view of the uniformly reddened drumhead seen through the speculum dispels all doubt. During severe infectious diseases, like measles, scarlet fever and diphtheria, the depressed condition of the patient may mask the onset of the ear symptoms, and it is particularly necessary under these circumstances to watch for them. Some doubt may arise in a given case whether the disease is the ordinary form of purulent inflammation, which surely terminates in perforation of the drumhead with discharge through the meatus, or whether it may not be the milder or abortive variety in which no perforation takes place. The latter form is much less common. As a rule the prognosis can be made within the first day. When the pain lasts continuously, perforation will surely follow. When the pain is intermittent, perhaps only nocturnal, the exudate may disappear without discharge through the drumhead. It is only when the pain has been distinctly intermittent that surgical puncture of the membrana tympani should be deferred. Otherwise the interests of the patient are best served by immediate paracentesis.

The first demand of the patient is usually for relief of the severe pain. The use of the various popular ear drops, tincture of opium in sweet-oil, camphorated oil and a host of others can not be condemned too severely. They are all utterly useless and have no influence on the pain. No form of application is known which can surely stop the earache of purulent otitis. Carbolic acid dissolved in glycerin—10 to 12 per cent. solution—has a slight benumbing influence in some mild instances, but it is not to be depended on. It may perhaps help to avert perforation in the mild form of cases. It can therefore be endorsed as a palliative and perhaps slightly curative agent, all the more so since it sterilizes the skin of the meatus if left in place sufficiently long. External heat in the form of the hot-water bag or the Japanese stove gives slight but grateful relief. Severe pain, however, can only be controlled by opium internally. The speediest way of obtaining relief is immediate paracentesis.

The curative treatment consists in draining the discharge promptly and efficiently and preventing secondary changes. The effusion is present as soon as the disease manifests itself, and the sooner it can escape the quicker the relief and the milder the course. It has not been sufficiently emphasized that the discharge is serous at the start—at least in most instances—and only becomes purulent later on. The more severe cases, and especially those due to streptococcus infection, may seem exceptions to this rule. In some of these instances mentioned the effusion is purulent when it breaks through the drumhead or even when paracentesis is done after thirty-six hours. I am quite in doubt, however, whether an earlier puncture would not have shown a serous fluid even in these apparent exceptions. When proper treatment is begun during the stage of serous discharge, the latter can be prevented from becoming purulent and the disease will then pursue the mildest and shortest course possible. Not only is its duration shortened, but the liability to complications is diminished. Personally I have never seen mastoiditis supervene in a case in which the discharge remained serous.

The change from a serous to a purulent discharge is in some instances due to later secondary (mixed) infection by bacterial invasion through the meatus, as can be shown by bacteriologic analysis. But I believe that this is only a later accident and that primarily the purulency is due to insufficient drainage of the serous discharge. For whenever the discharge is retained in the midde ear until a late spontaneous perforation occurs, perhaps on the third or fourth day, it is almost surely purulent. Experience thus points out three well-defined indications in the treatment, viz., early paracentesis, efficient drainage, absolute asepsis.

Puncturing the drumhead is an easy, safe operation for which every practitioner ought to be prepared. The technical details are found in all text-books on the ear. It must be remembered that it causes a sharp, but transient, pain which can not be diminished by any local anesthetic. Before the operation the meatus should be cleansed by syringing if it contains wax or scales of skin, otherwise this is unnecessary. After spontaneous perforation or paracentesis syringing should be avoided. It is useless at best, and if repeated seems to influence the disease unfavorably. If required in order to obtain a view of the punctured drumhead, it should be done with sterile water and under aseptic precautions.

Before paracentesis the meatus should be sterilized in a reliable way. Watery carbolic acid solution may be left in place for at least three minutes, filling the meatus and the auricle. Carbolic acid dissolved in glycerin is not as active a disinfectant and requires a longer time, but its efficacy is increased by previously moistening the walls of the meatus with water. The same sterilization is required before applying the first dressing after spontaneous perforation. For the purpose of drainage, a narrow strip ($\frac{1}{2}$ by 4 inches) of a good absorbent gauze is pushed with a probe through the disinfected speculum into the meatus until it touches the drumhead. The concavity of the auricle is then packed with bits of gauze until a thick pad is formed. As the discharge is sometimes very copious, a large absorbing cushion is required. It may be retained by a strip of adhesive plaster. The external pad should be replaced when it gets moist, which the properly instructed patient can do himself. The strip in the meatus, however, should only be changed by the surgeon once in one or two days. As it is impossible to assure permanent sterility by asepsis alone, it is best to powder the gauze freely with a mixture of boric and salicylic acids (6 to 1). With sufficient thoroughness a serous discharge can thus be prevented from becoming purulent and the patient be saved considerable discomfort, delay and danger. Even when the treatment is begun too late, when the discharge has assumed a purulent character, it is still the best method to insure the most rapid course under the circumstances. Occasionally it happens, especially with a purulent discharge, that the walls of the meatus get macerated. It is best to omit the salicylic acid in such instances, using only boric acid, and to protect the skin by smearing with an oxid of zinc and lanolin salve after thorough drying.

The prevention of acute otitis consists in attention to those influences which are known as causes or predisposing factors and which the family physician can control. The most important of these is the enlargement of the pharyngeal tonsil, or adenoid vegetations. I have observed with much satisfaction that the profession is getting more and more to recognize the importance of this frequent morbid occurrence, and it is only rarely that I now hear the old vicious advice given to patients, "to wait and outgrow it." Experience has shown in the most positive manner that an enlarged pharyngeal tonsil enormously increases the danger to the ear whenever the child takes scarlet fever, diphtheria or measles or merely acquires an acute nasal catarrh. The family physician should insist, without exception, on the removal of adenoid vegetations whenever they are of sufficient size to produce the easily recognizable symptoms of nocturnal nasal obstruction. The operation is free from risk of any kind and properly done causes very little pain.

A second important influence which often leads to a suppurative otitis is the misuse of the nasal douche. I do not condemn the nasal douche as such. It is a valuable therapeutic method with definite indications. But it should not be advised except for these specific indications, since in other instances it is useless. I do not think that it ought to be recommended by any one not fully familiar with nasal pathology. In spite of numerous warnings by otologists, many physicians are still not fully aware of the dangers of the douche. When water gets into the Eustachian tube a violent otitis is almost sure to follow. Many an ear has been permanently damaged and much needless suffering has been caused by the careless advice to a patient "to syringe out the nose." Worse even than this is the suggestion to snuff up fluids or to pour them into the nose with some spoon-shaped device intended as a substitute for the douche. The different contrivances sold for this purpose have not even the valid excuse which can be claimed for the douche itself. The latter does really remove viscid secretion from the upper part of the nasal cavity, where its presence perpetuates disease. The substitutes do not accomplish this at all, but carry with them all the danger to the ear incident to nasal irrigation.

A physician not well versed in nasal diseases will do better to avoid the nasal douche and to substitute for it the liberal use of the spray from a good atomizer for the purpose of removing secretion. Though less efficient than the douche, it is safe. Its frequent employment, especially in the suppurative rhinitis accompanying the infectious diseases of childhood, lessens to a moderate extent the liability to infection of the middle ear. The material used in the atomizer is nearly irrelevant. It is the mechanical effect, which can only be obtained by a coarse, watery spray, upon which its utility depends.

Clinical Reports.

PRIMARY UNION IN A GUNSHOT WOUND.

REPORT OF CASE.

ALBERT SOILAND, M.D.

LONG LEAF, LA.

S. V. C., night-watchman at a planing-mill, was accidently shot while stooping to pick up an object from the floor, his pistol falling out of its holster and being discharged upon striking the floor. The ball, of 41-caliber size, entered the anterior fold of the left axilla, between the third and fourth ribs, and emerged at the back, between the sixth and seventh ribs, just external to the axillary border of the scapula. The patient was able to walk from the place of accident to his house, a distance of 500 yards, and when I arrived I found him bleeding profusely and complaining of an intense burning pain through the entire left side. There was very little shock noticed and he was in good spirits. The anterior wound was round, clean and surrounded by a few powder-burn marks. The posterior wound, or point of exit of the bullet, was large and ragged, and from this the hemorrhage ensued. On careful palpation I could not detect any crepitus nor signs of extravasations of blood in the pleural sac.

Treatment.—Both wounds were syringed out thoroughly with hydrogen peroxid, packed with sterile gauze, and a moderately tight bandage applied. Ten grains of citrophin were administered and a like amount ordered taken in one hour if very restless. On the following morning the dressings were removed and the same procedure gone through with as before. Pain was now nearly gone and hemorrhage reduced to a mere oozing of serum. No further internal medication was deemed necessary, as the pulse and temperature were found to be normal. A saline was administered, however, and a generous diet of easy digestibility instituted. On the fourth morning dressings were found to be absolutely dry and the anterior wound nearly closed up, the posterior being reduced to one-half its original size and filled with healthy granulations. A fresh dry dressing was now applied, plain sterile gauze being placed over the wounds and a minute quantity of iodoform was sprinkled into the meshes of the gauze, this dressing to remain on indefinitely. On the sixth day the patient walked about and suffered no inconvenience, except a little stiffness noticed in the left side. On the morning of the tenth day dressings were removed and both wounds found to be nicely healed, a firm cicatrix covering each one. That night he resumed his work as watchman, exactly ten days from the time of accident.

It might be well to state that that patient had taken a bath and donned clean undergarments just prior to the accident. He wore no coat nor vest, as the weather was extremely warm. This may account for the absence of infection and the aseptic condition of the injury throughout its course.

CASE OF TYPHOID IN AN INFANT.[*]

MINNIE C. T. LOVE, M.D.

DENVER, COLO.

The only notable thing in this case is the age of the patient. She was born March 8, 1900, so that she was 8 months old at the time of contracting the fever. When I began taking her temperature, regularly, I found it ranging between 102.5 and 103 in the mornings, and 103.5 and 104 in the afternoons. I was attending an older brother who had scarlet fever, and the mother called my attention to the baby, saying that she had had considerable fever of nights for over a week. On examination, I found rose spots on the trunk, and a dry, brown tongue. Although the clinical picture was so plain, I was skeptical, and asked Dr. J. N. Hall to see the patient with me. He was of the opinion that it was an undoubted typhoid, and the examination of the blood by Dr. Wilder, for the Widal test, confirmed the diagnosis. The course of the disease was typical, the temperature gradually declining, and reaching normal about the twenty-first day. The rose spots were very plentifully distributed over the trunk and limbs. The temperature, from about the tenth to the seventeenth day, rose to 104 F., every evening. The babe was entirely breast-fed. There was no tremor nor delirium noticeable, no tympanites and no diarrhea. This was the third case in the family since September 6. A girl of 10 years was very ill, a severe relapse prolonging the attack to over seven weeks. Ten days after the first, a child 3 years old developed a well-marked case, but it aborted about the fourteenth day. Between eight and nine weeks elapsed between the first and third cases. The mother had typhoid twelve years ago, but, as the oldest child had such a severe attack, and the 3-year old a more moderate one, we may exclude any condition of the mother's blood being transmitted to the baby which would give a Widal reaction. Unfortunately, the mother, who nursed all the children, destroyed the temperature records. This case is interesting, as it is rare to see typhoid under 2 years of age.

Nevada Building.

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[*] Read before the Denver and Arapahoe Medical Society.

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LARDACEOUS, WAXY OR AMYLOID DISEASE OF THE KIDNEYS.

Our knowledge of amyloid disease of the kidneys is of comparatively recent date. Rokitansky, in 1842, described the amyloid kidney as representing a special variety of nephritis. From the appearance of the organs, on account of their resemblances to bacon, he described them as *speckartig,* which has been rendered into English as "lardaceous." The term "waxy" has also been employed. Ten years later Meckel discovered the characteristic reaction with compound solution of iodin, and shortly afterward Virchow showed that this reaction was dependent not on the presence of cholesterin, but upon that of amylon, a substance resembling vegetable cellulose, and subsequently found to be a proteid.

The morbid process is a degenerative one, and, as Litten[1] points out in a recent communication, it does not generally arise spontaneously, but it is almost always secondary to some cachectic condition, especially tuberculosis, scrofulosis, suppuration of the skin, bones or mucous membranes, syphilis, intestinal ulceration, malaria, pyelitis, carcinoma, leg-ulcers of long standing, chronic bronchitis, gout, emphysema, spondylitis, pulmonary abscesses, etc. Amyloid degeneration, however, does occasionally occur independently, without apparent cause. Children are less commonly attacked by the disease than adults. The condition is most prevalent in middle life. It develops slowly, often insidiously, and it may persist for years; occasionally it is rapid in development. The spleen and the kidneys are the organs almost invariably involved earliest and in greatest degree in the morbid process, especially the former. The liver and the intestinal mucous membrane probably follow next in frequency.

One of the most usual symptoms of amyloid disease is dropsy, both of the serous membranes and of the subcutaneous connective tissues. The former most frequently takes the form of ascites, while the latter appears especially in the lower extremities, the genitalia and the abdominal walls. The exhaustion of the patient is favored by disease of the liver, the spleen and the intestines. Involvement of the intestines is usually associated with diarrhea, which is dependent in part on ulceration, and in part upon degeneration of the villi and their vessels, as well as portal stasis. Vomiting is less common, but when present it is usually obstinate; the vomited matters have at times an odor of ammonia. When the liver and the spleen are involved they may be considerably enlarged. Uremic symptoms and apoplexy are rare. Hypertrophy of the heart also is uncommon, except in the presence of contracted kidney.

Three principal varieties of amyloid disease of the kidney may be distinguished anatomically: 1. Pure amyloid disease of the vessels, with or without fatty degeneration of the cortical epithelium—pure amyloid kidney. 2. Amyloid degeneration with chronic parenchymatous nephritis—large, white amyloid kidney. 3. Amyloid contracted kidney. The first variety is not common, and it may escape recognition during life, unless coincident enlargement of the spleen indicates its presence; and even after death the disease of the kidney may not be obvious on macroscopic examination. The second variety is much more common, and the third least so. A fourth variety, rarely observed, is sometimes described, representing a combination of acute nephritis with pre-existing amyloid disease.

Amyloid disease begins in the blood-vessels, and especially in the muscular layer, though the intima and the adventitia do not, as a rule, entirely escape. Rarely the morbid process extends to adjacent tissues. Macroscopically the condition is recognizable from the peculiar luster to which it gives rise, and which has been compared to the appearance of bacon, but particularly from its reaction to certain chemical agents. Thus, addition of compound solution of iodin causes the development of a mahogany-brown color; of sulphuric acid and zinc chlorid, the development of from a violet to a blue color; of methyl-violet, an intense and brilliant red color; and of thionin, a sky-blue color.

Amyloid disease of the kidneys is supposed to begin in the glomeruli and to extend thence to the afferent vessels, the interlobular arteries, as well as the straight arteries of the medullary portion, and finally the efferent vessels and the capillaries of the cortical structure. It is not distributed homogeneously, nor does it extend by continuity or contiguity, but its distribution is rather irregular and disseminated. The lumen of the vessels may be variously narrowed, but their walls are not unduly friable, and they do not rupture.

In the majority of cases of amyloid disease of the kidneys the urine is free, pale, clear, of low specific gravity, without noteworthy sediment or the presence of morphologic elements. At times, however, the secretion exhibits great variations in quantity and quality. It has been stated that amyloid tube-casts appear in the urine; but with regard to this there is serious doubt. So, too, it has been thought that albumin is invariably present, but evidence is not wanting that this view is not strictly correct. Whether albumin will or will not appear in the urine depends, it is thought, in the first place, on the amount of albumin excreted by the kidneys, and in the second place, on the absorptive power of the uriniferous tubules. The amyloid, large white kidney is, it is true, always attended with the presence of large amounts of albumin in the urine, as is likewise the kidney when it is the seat of amyloid disease and parenchymatous inflammation.

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[1] Berliner klin. Woch., 1900, Nos. 51 and 52.

The diagnosis of amyloid disease of the kidneys will depend essentially on a knowledge of the existence, present or past, of any of the etiologic factors named, together with a recognition of similar disease in other organs, as for instance in the liver and spleen from enlargement of these organs, or in the intestines from the presence of diarrhea. So too both prophylaxis and treatment will require a consideration of the causative conditions and the application of the necessary measures for their removal or amelioration. In other respects the therapeusis will be governed by general principles and is much the same as that indicated for the several varieties of nephritis, with which too often the amyloid disease is associated.

THE BONE MARROW AND LEUCOCYTOSIS.

In various inflammatory conditions leucocytes migrate from the vessels in enormous numbers and at the same time there usually is a more or less marked general leucocytosis. Most of the leucocytes in question are of the finely granular variety, with polymorphous nuclei—"polynuclear leucocytes." The mechanism of leucocytosis, which apparently is a very sensitive one, is not thoroughly understood. It is acceded generally that a proliferation must take place in order to account for the great increase in leucocytes in the conditions just mentioned. The exact changes that lie at the bottom of the proliferation are quite hidden as yet. We do not understand the chemical and physical processes set going by the so-called chemotactic substances of various kinds, which induce general leucocytosis and local leucocytic accumulations. This problem is one of fundamental importance, and its ultimate solution depends on other methods of observation than the prevailing morphologic mode of study. There are many things that speak in favor of the bone marrow as the ultimate source of the leucocytes that make up the great bulk of cells in local and general leucocytosis. Ehrlich, Ribbert and others hold this view, which they base on the facts that the granules of the polymorphonuclear leucocytes resemble those of certain cells in the bone marrow, and that the bone marrow undergoes a definite change when there is an increased demand for leucocytes.

Robert Muir[1] has recently given a summary of his experiments bearing on this question. According to him, the bone marrow contains three kinds of cells that are of especial interest in this connection, *a*, cells with a finely granular protoplasm form the great majority, the granules corresponding to those polymorphonuclear leucocytes in being neutrophile; *b*, cells with coarse, eosinophile granules, and *c*, hyaline or non-granular cells. Only the two first should be called myelocytes. The finely granular myelocytes have a single round, oval or slightly indented nucleus. These cells are prone to multiply, and multiplying they produce smaller cells, the nucleus of which becomes polymorphous at the same time as ameboid movement is acquired, and thus they give rise to the polymorphonuclear leucocyte of the blood. The eosinophilous myelocytes are held by Muir to produce the eosinophilous leucocyte. Muir found that the smaller finely granular cells lie at the margin of the blood channels of the marrow, thus forming a reserve store of leucocytes. When staphylococcus pyogenes aureus is injected into rabbits, leucocytosis develops after a preliminary leucopenia. Marked proliferative changes appear in the bone marrow, the finely granular myelocytes increase in number and show numerous mitotic figures, and the fat cells of the marrow are crowded out. The marrow assumes the "leucoblastic" type. Myelocytes and erythroblasts may pass into the blood stream. Muir did not find that the spleen took active part in the increased supply of leucocytes, and constant changes are not present in the lymphoid tissue in experiments of this kind.

With Ehrlich and others, Muir considers chemotaxis as the essential factor in leucocytosis. The absorption of chemotactic substances into the blood induces the passage of leucocytes from the bone marrow into the blood stream. Local and general leucocytosis is produced by a similar mechanicism. The hyperplastic processes in the myelocytes may be induced by the rapid passage of leucocytes from the marrow into the blood. The newly-formed cells constantly pass into the blood, and proliferation of myelocytes may be explained according to Weigert's theory of over-regeneration after repeated loss. Muir also suggests the possibility that the substance which acts chemotactically may also directly stimulate cellular proliferation.

MARRIAGE LEGISLATION IN MINNESOTA.

The Journal a few weeks ago briefly noticed the proposed marriage legislation in several states, and the probable difficulties in the enforcement of the laws when passed. The bill now before the Minnesota legislature is probably one of the best conceived and most practicable of these, and a brief notice of its chief provisions is perhaps not out of place. It provides that no man or woman who is epileptic, imbecile, feeble-minded or afflicted with chronic insanity shall intermarry when the woman is under the age of 45 years, and that no person not thus afflicted shall marry any one unless under severe penalties. No official shall issue a marriage license to any applicant unless, in addition to the conditions heretofore required, he shall be furnished with a certificate from a reputable physician, or physicians of the counties in which the applicants reside, certifying that on examination it has been found that there is, besides the patient's actual freedom from imbecility and insanity, no such defect in parents, grandparents, brothers or sisters. Every such certificate must be filed in the office of the licensing official. No clergyman or other person authorized to solemnize marriages shall perform the marriage ceremony for any person not thus qualified by this law, under severe penalty.

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[1] Jour. Path. and Bact., 1901, vii, 161-183.

It will be seen from the above that the proposed law is comparatively limited in its scope, and that the provisions for its enforcement are such as may probably be fairly efficient within the state itself. The difficulty will remain that unless other, and especially adjoining, states adopt similar regulations it will be practically a dead letter, as forbidden marriages can be contracted at any time over the boundaries. This is evidently recognized, and it is said that the Minnesota authorities will ask other states to enact similar laws. It is still a question whether, in making a family taint, including both direct heredity of insanity or imbecility back several generations and collateral heredity in brothers and sisters, a bar to marriage, the authors of this proposed legislation have not gone too far. Such a law would disqualify a large proportion, if indeed not the great majority, of the members of the reigning families of Europe, and a strict construction of the act might make it inconveniently comprehensive in its workings even in Minnesota. There are possibilities of purely acquired chronic insanities involving no family taint, and some discretion, it would seem, might in justice have been allowed the certifying physician for such cases. This, it is true, would let in a chance for evasion that the present wording prevents, and this is one of the difficulties met with in all such legislation.

It will be of interest to observe the working of this and similar enactments. Something like this is on the statute books of at least one eastern state, and the experience of its enforcement might be suggestive and instructive to the Minnesota legislature. In any case there is no question as to the desirability of checking the degenerative tendencies of modern life and the propagation of degenerates, and the experiment of legislation to that effect will be of value—possibly in its effects, certainly in its instruction.

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[1] Journal A. M. A., March 9, pp. 673 and 679.

NEWSPAPER IGNORANCE AND SCIENTIFIC MEDICINE.

The death of Ex-president Harrison is taken as a text for abusing the medical profession by one of the quack-favoring dailies. It calls the event a "conspicuous instance of the helplessness of the medical profession when confronted by certain cases of diseases." Pneumonia, it says, while it is "always dangerous, is seldom deadly," and it suggests what a storm would have been raised if the ex-preident had trusted himself to the osteopaths or "Christian Scientists." The editorial is a type of many now appearing, inspired by ignorance and malice, and the question often arises whether such utterances are unworthy of notice or should be taken up and resented. Under ordinary circumstances it would hardly be worth the trouble to notice them, for they usually defeat their own purpose by their rank exaggeration and evident inspiration by prejudice and ignorance. It does not require much intelligence to recognize the fact that medicine has earned the confidence of the public by its success, and to perceive the probability that this same caviling editor would throw himself into the hands of a physician did he think himself the victim of a dangerous or troublesome disease. An average intellect can perceive that the death of so prominent an individual under the ministration of voodooists or ignorant masseurs or bone-setters might reasonably arouse comment and sins of omission be charged. The editor and the public do not apparently know, however, that for six months of the year pneumonia is one of the most fatal of all diseases in our northern climate, and with its la grippe complications incomparably the most fatal. Moreover, it is the disorder which, more than others in recent years, has been one of the least amenable to control, and its mortality is increasing while that of other diseases, like tuberculosis, is decreasing. The editorial referred to is simply an exhibition of ignorance in this respect. There is a sort of cheap self-consciousness of virtue and liberality indulged in by editors and others that shows itself in taking up and supporting self-assertive frauds and denouncing the bigotry of those who, with better knowledge, are compelled to conscientiously oppose them. It does not matter to such that a little investigation of facts and a limited utilization of their intellects would demonstrate to them the error of their ways. They are too well satisfied with things as they are. In the meantime medicine and the medical profession will continue to follow the scientific paths and do all they can to lead mankind into the ways of bodily salvation.

MALARIA FROM AN ECONOMIC STANDPOINT.

One is surprised on reading Celli's books[1] on malaria, recently translated into English, to see how this authority has quite subordinated the scientific and medical view to the social and economic, or rather, how he has utilized scientific and medical truths to solve those of an economic and social nature. Some facts presented are almost startling. For instance, he tells us that in Italy the mean annual mortality from malaria is about 15,000, and the number of those who suffer from the disease he estimates at 2,000,000 a year, with a rather long average duration of illness. The loss in productiveness of labor and productions and the expense entailed in dealing with this disease consequently amount to several million francs. Because of malaria more than 5,000,000 acres of land are imperfectly cultivated, and in these localities the average life of the workman is shorter, the infant mortality higher, and the number of emigrants greater than would otherwise be the case in healthy places. The economic loss from malaria is, therefore, enormous. Some of the railways have to reckon on a certain sum to be expended annually on account of malaria. One company with about 850 miles of railway, and employing 6416 workmen, spends $200,000 a year for this reason. The army has averaged about 15,000 cases a year for twenty years. One can thus see how the question is of prime importance to the state, and how legislation may be necessary to secure those conditions that will tend to check the development and the spread of the scourge. Attention must be given to destruction of the breeding-places of the mosquito. Forests, standing or sluggish water, rice and cane fields, peat bogs, fish-ponds and certain industries, such as the maceration of hemp, must be under governmental supervision. In fact, laws regulating the cultivation of rice, where the wet fields afford excellent breeding-places for the mosquito, have been for years on the statute books, placed there even before the relation of the mosquito to the disease was known.

The insect in its larval state must be subject to government attack. And laws may be necessary to regulate the proper building of houses, the screening of the doors and windows, the furnishing of proper food and clothing to the laborer by his employer, the compulsory isolation of those ill with malaria, etc. Realizing that the vulnerability of an individual to disease may depend much upon proper food, clothing and hygienic surroundings, when we read of the condition of the Italian laborers as it is depicted by Celli, how they are often huddled together in wretched huts or even caves, underfed, insufficiently clothed, overworked yet poorly paid by the capitalist land owner with his hireling overseers, we can well understand the earnest words that the author pens in an almost socialistic strain, and can see how the mosquito is perhaps destined to play a not insignificant part in improving the condition of the poor in Italy and in bringing about a social revolution.

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[1] Celli, Angelo: Malaria According to the New Researches. Translated from the second Italian edition by John Joseph Eyre. Longmans, Green & Co. 1900.

What is said concerning the sociologic and economic view of the mosquito in Italy will apply with greater or less force to other malaria-scourged lands, even to including our own country, especially since it is now responsible for the welfare of the newly-acquired tropical possessions.

THE INFLUENCE OF SERUMTHERAPY ON DIPHTHERIC STENOSIS OF THE LARYNX.

It has been objected by those who are not convinced of the efficacy of the antitoxin treatment of diphtheria, that since this method has been introduced into hospital practice a relatively larger number of mild cases are admitted into the hospitals. Even were this objection supported by the facts, it would admittedly not be applicable to private practice. It has further been suggested that both in hospitals and in private practice a change in the character of the disease has taken place, in the direction of an attenuation in its virulence and a lessening of its fatality; but even did such a variation coincide with the introduction of serumtherapy, it would be applicable to mild and severe cases collectively. and not to severe cases alone. To eliminate these objections as far as possible, Galatti[1] has made a study of the cases under his observation in which symptoms of laryngeal stenosis were present, and his services were invoked in consultation with other physicians for the purpose of performing intubation. Sixty-one carefully observed cases seen in the course of several years—29 before and 32 since the introduction of serumtherapy—were analyzed. Intubation was advised against in 20 of these, such treatment being meanwhile employed as was in vogue at the time. Of the 29 cases of laryngeal stenosis prior to the employment of serumtherapy, recovery occurred in 6—21 per cent.—without operative intervention, while of the 32 cases during the antitoxin period, recovery ensued in 14 or 44 per cent. without operation. A comparison of the cases subjected to intubation in the pre-antitoxin period with the cases of laryngeal obstruction treated with antitoxin, and thus escaping intubation, as well as with cases requiring intubation, showed that there was little difference between the several groups of cases with regard to severity. The lessened necessity for intubation was not found to be dependent on differences in age, as the improvement was noted equally in earlier and in later childhood. In the pre-antitoxin period, intubation had to be supplemented by tracheotomy in 1 case, and in the antitoxin period in 5 cases. This circumstance must be considered as indicative of the gravity of the cases of the latter group. Of the 23 intubated cases of the first period, death occurred in 11—47.8 per cent; while of the 18 intubated cases treated with antitoxin, death occurred in 1, or 5.5 per cent., and this probably because of the small dose employed. The period for which intubation had to be maintained was *shorter* in the serum-treated than in other cases, being on an average fifty-seven hours for the former and seventy-eight and one-half for the latter, the contrast being particularly marked in the cases in which recovery ensued, namely, as 58 to 108. The length of the period in individual cases varied between thirty and seventy-nine hours in the cases treated with antitoxin; and between thirty-one and forty-three and three-fifths hours in the cases treated in the pre-antitoxin period.

Medical News.

ARKANSAS.

A unique bill has been introduced in the legislature, to prevent physicians and surgeons from practicing if they use intoxicating liquors as beverages.

The State Board of Health has been organized, with Dr. George M. D. Cantrell, Little Rock, president, and Dr. Robert B. Christian, Little Rock, secretary.

CONNECTICUT.

A sanatorium for consumptives is to be built on Cedar Hill, three miles from Hartford, on land owned by the Hartford Hospital.

The citizens of Westville, New Haven, held a mass meeting and have protested against the establishment of a hospital for contagious diseases in that village.

Dr. Joseph H. Townsend, New Haven, has been appointed a member of the State Board of Health, vice Dr. G. Herrick Wilson, Meriden, whose term has expired.

Physicians have appeared before the judiciary committee of the legislature in behalf of the medical practice act with especial reference to reciprocity in certificates between the various states.

DELAWARE.

Dr. Joseph W. Bastian, Wilmington, has been appointed port physician.

Delaware Hospital, Wilmington, has received $5000, a legacy under the will of Mrs. Sarah Esther Cummins, of Smyrna, to endow a bed in memory of her parents.

The Abbott bill, which permits physicians who have practiced ten years in another state and have resided one year in Delaware, to practice in Delaware without undergoing an examination, is meeting with vigorous opposition from the reputable physicians of the state.

Smallpox prevails in Seaford, where it was discovered seven weeks ago. The disease is said to be confined mostly to negroes, and up to March 13, about 50 cases had been reported. On that date members of the State Board of Health visited the town and promulgated regulations providing for thorough vaccination and quarantine, to include obstructing of the town; appointment of inspectors and thorough antiseptic bathing of patients, and complete disinfection, private interment and abolition of all public assemblages. Georgetown has decided to place armed pickets along the roads leading from Seaford, in order to prevent the disease from spreading to that town. Every resident has been ordered to become vaccinated under a penalty of $10 fine.

ILLINOIS.

A Jerseyville practitioner was fined $100 and costs, March 12, for practicing medicine without a license.

Rockford City Hospital's consulting staff, on March 15, elected Dr. Daniel Lichty, president, and Dr. Sanford R. Catlin, secretary.

A fine was imposed on a Clinton physician, on March 14, for failing to report a case of contagious disease to the local board of health.

Quarantine of Salisbury, on account of smallpox, is said to be contemplated by the State Board of Health. As usual, the local physicians deny the existence of the disease.

Dr. George A. Zeller, Peoria, who went to the Philippines two years ago as acting assistant surgeon, has been promoted and now holds the rank of captain and assistant surgeon of volunteers.

Dr. James A. Egan, secretary of the State Board of Health, has been nominated and appointed a member of the State Board of Health, to succeed Dr. Peter H. Wessel, Moline. In his communication to the senate, the governor says: "This appointment is made because I deem it best that the secretary of the State Board of Health should be a member of the board."

Chicago.

Dr. Niles T. Quales, who was injured by an accident, March 15, and taken to the Deaconness Hospital, is now convalescent.

County Hospital Staff.—The following-named physicians have been appointed on the assistant staff of Cook County Hospital: F. Gregory Connell, Maurice L. Goodkind, Arthur M. Corwin, Carl J. Anderson, Bertram W. Sippy, Henry F. Lewis, William A. Quinn, Amuel B. Spach, William A. MacFarlane.

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[1] Wiener med. Woch., 1901, Nos. 2 and 3.

John E. Rhodes, August F. Lemke, Arthur D. Houghton, George E. Thompson, David J. Doherty, Henry J. Brugge, and Patrick J. H. Farrell, of Chicago, and Dr. William R. Livingston, Maywood.

Decreased Mortality of Chicago.—There have been 581 fewer deaths this year, up to the close of last week, than during the corresponding period of 1900. This is a decrease of nearly 10 per cent. In the first twenty-three days of March there were 1451 deaths from all causes, as against 1833 in the similar period last year—a reduction of a little more than one-fifth. Last week the total reported deaths numbered 465; for the corresponding week one year ago, 640, or 30 per cent. more. This low mortality record, which has now been maintained since the end of the fourth week of January—up to which date the deaths this year slightly exceeded those of last, the respective totals then being 2095 and 2056, is without parallel in the history of the city. In the presence of influenza and smallpox it is nothing short of marvelous. The deaths from diseases of the respiratory system numbered 173, diseases of the heart caused 33, and nervous diseases, 34 deaths; violence is noted as the cause of death in 33 instances.

Unvaccinated School Children.—Judge Dunne's ruling that unvaccinated children can not be excluded from schools until an emergency exists, is susceptible of various and dangerous interpretations. Dr. Spalding, chief medical inspector of the health department, says that there is always an emergency. The office of the health department is to prevent, not to cure disease. As a result of the extraordinary precautions against smallpox, of the 138 cases of the malady this winter only 4 were of school children, and not one of these children had been vaccinated, but each was attending school on false certificate of vaccination. Smallpox takes hold rapidly. If Chicago had not been thoroughly vaccinated when smallpox broke out last year there would have been a great epidemic. Children being more susceptible to the disease, as they are to all contagious diseases, would have been the first to suffer. The history of smallpox in the city shows that in the epidemic of fourteen years ago 40 per cent. of the children stricken died, while the general mortality was only 25 per cent. In 1893 there were 4000 to 5000 cases, and the children furnished a heavy proportion of them.

IOWA.

Dr. Charles R. Russell, Ottumwa, was elected state physician of the Knights of the Maccabees, March 15, by a large majority.

Dr. William S. Grimes, Wapello, has been appointed a member of the pension examining board, vice Dr. G. W. Younken, resigned.

Dr. Maurice A. Hanson, Osage, is about to take a three-years' post-graduate course in Vienna, devoting his attention chiefly to surgery.

Dr. Edward E. Dorr, Des Moines, has started a movement for the transfer of the medical school of the state university from Iowa City to Des Moines.

MARYLAND.

Baltimore.

Dr. G. Lane Taneyhill has been elected first vice-president of the Baltimore City Missionary and Church Extension Society of the M. E. Church.

Dr. Schwatka, the new surgeon-general of Maryland, is outlining a plan whereby the duty of the medical officers and hospital corps of the national guard shall not be purely ornamental. His plan provides for a thorough course in field-hospital work.

Notes from Osler's Clinic.—Of 51 cases of lobar pneumonia in the hospital this session, there have been 14 deaths. There were 24 cases of typhoid fever; in 9 of these there were relapses; in 12, the typhoid bacilli were isolated from the blood, in 4 of these before the Widal reaction appeared. Two cases of typhoid fever were admitted to the surgical side and operated on for appendicitis.

Pneumonia Antitoxin.—The recovery of Quarantine Physician Sydney O. Heiskell, from pneumonia, following rapidly on two injections of pneumonia antitoxin, is attracting much attention. He testified to the great relief it gave, which morphin failed to give. From a statement made at the health department, it is learned that members of the department first used the serum in 1899, Dr. C. B. Canby publishing successful results in three or four cases. Other cases were known to have been successful and there was one failure. In all there was almost immediate relief from pain and oppressed breathing. Such relief is confidently looked for within four hours. The injection should be given as soon as the diagnosis has been made, and repeated every four to six hours until results are obtained. It is only in the pneumococcus that the antitoxin is of service. In Heiskell's case, treatment was instituted in twenty-four hours. At 4 p. m. the temperature was 102 degrees, respiration 35 and pulse 100; sputum rusty. At 5.45 p. m. 20 c.c. of serum was injected. At 10 p. m. the temperature was 100.6 degrees; respiration, 30, and pulse 98. A second injection was given and at 4 a. m. the temperature was 99.6 degrees; respirations, 25, and pulse 90.

MASSACHUSETTS.

Dr. James C. D. Clark has been appointed city physician of Medford.

Dr. Mary P. Dole, Greenfield, has been elected a member of the board of managers of the Franklin County Hospital.

Dickinson Hospital, Northampton, is to be given a new operating-room fully equipped, as a memorial of a citizen of Northampton.

Anne Jaques Hospital, Newburyport, in one week has received a $10,000 bequest from Mrs. Sophia C. Hale, and an offer of a $5000 site and a $50,000 new building from William C. Todd.

Amendment to Registration Law.—Dr. Immanuel Pfeiffer, North Adams, has urged before a legislature committee the adoption of amendments to the law regulating the registration of physicians and surgeons. As finally presented to the committee the petition asked that any person having a diploma from a recognized medical college shall be registered without examination; that the fee for registration be reduced from $20 to $10; that such fees shall be paid into the state treasury; that all expenses and salaries of members of the State Board of Registration in Medicine shall be paid from the treasury; that such salary and expenses shall not exceed $1200 annually for any single member of the Board, and that all examination papers shall be open to the inspection of physicians for three years after such examination.

MINNESOTA.

By the will of Mrs. George A. Pillsbury, Minneapolis, the Northwestern Hospital in that city received $10,000.

Temperance is the text of a bill introduced by Representative Sageng, Otter Tail, which makes it a misdemeanor for physicians or surgeons to administer medicines or perform operations when under the influence of liquor.

The St. Paul physician charged with violating the health ordinance in failing to report a case of smallpox was discharged March 17, the judge holding that there was no evidence to show that the defendant recognized the case in question as being smallpox.

Members of Health Boards.—Amendments to the laws have been presented by Senator Chilton, which provide that county boards of health shall consist of the county attorney and a physician, the latter to be the health officer and to be selected by the county commissioners; that township boards of health shall be composed of the supervisors, who may select a physician or local health officer; that village boards of health shall consist of three members, one of whom shall be a physician, and that the secretary of the State Board of Health must be a physician.

MISSOURI.

The Hall medical bill has been signed by the governor, and becomes operative ninety days after the adjournment of the legislature.

Mumps is epidemic in St. Louis. Physicians estimate that there are 20,000 cases in the city at present, and that in 85 per cent. of the cases the disease was preceded by influenza.

Columbian Medical College, Kansas City, has held its annual commencement exercises, March 19, and graduated a class of 14. The annual address was delivered by Rev. George H. Combs, D.D.

Ensworth Hospital Medical College, St. Joseph, held its graduating exercises March 18, and granted diplomas to a class of nine. Prof. B. Macafee, president of Park College, Parkville, delivered the address to the class.

NEW HAMPSHIRE.

Margaret Pillsbury Hospital, Concord, is a beneficiary to the extent of $25,000, by the will of Margaret A. Pillsbury.

Manchester's Board of Health, at its annual meeting, reelected Dr. William M. Parsons as its medical adviser and health officer.

The State Board of Health has taken forcible possession of one of the boarding houses of the Cheshire mills, at Harrisville, for use as an isolation smallpox hospital. For three weeks the contagion has been raging and on the increase.

NEW YORK.

Dr. Roland H. Stubbs has been elected health officer of Waterford.

Dr. William E. Johnson, Waverly, has been appointed secretary to the state health commissioner.

Minerva offers inducements to a young medical man looking for a location. At a recent town meeting it was voted to pay a physician $500 a year if he will only settle there. The town has a population of 1052.

Legislation on Practice.—A bill has been introduced providing that no person shall practice hypnotism, mesmerism, suggestive therapeutics and allied phenomena after May 1, unless previously registered and legally authorized, or unless authorized by the Regents. Candidates are required to show evidence of good general education and of having studied medicine in a medical school for at least two full school years. The penalty for violation of the provisions of this bill is a fine of not more than $250 or imprisonment for six months for the first offense.

Buffalo.

Dr. Fred A. Pitkin has been appointed house physician to the German Hospital.

Dr. Nelson A. Wilson has been appointed sanitary officer of the Pan-American Exposition.

German Hospital Staff.—The election of officers on the medical staff of the hospital resulted as follows: Dr. Charles H. W. Auel, president; Dr. Marcello Hartwig, vice-president, and Dr. Charles Weil, secretary. The position of clinical pathologist was filled by the election of Drs. William G. Bissell and Albert E. Woehnert.

Erie County Hospital Staff.—At a recent meeting of the Erie County hospital staff, Dr. Harvey R. Gaylord, Vertner Kenerson and Marshall Clinton were elected to fill positions on the attending surgical staff made vacant by the resignations of Drs. Eugene A. Smith, John Parmenter and Herbert Mickle.

New York City.

Dr. Francis Delafield, who has so long occupied the chair of practice of medicine in the College of Physicians and Surgeons, has resigned and will be succeeded by his clinical assistant, Dr. Walter B. James.

St. Luke's Hospital is to sell the remaining five lots of its old site on Fifth Avenue, for $575,000. The market value of its remaining real estate is $2,326,000, and the cash value of its *personal* assets $1,180,260.

New Maternity.—Application has been made for articles of incorporation of a new maternity hospital, to be known as the Manhattan Maternity Hospital and Dispensary. A wealthy gentleman, whose name is at present withheld, has donated a sufficient sum to build and equip the hospital, and partly maintain it for a term of years. It will have a small indoor service for especially severe and complicated obstetric cases, but its special sphere of usefulness is stated to be the carrying on of a large tenement-house midwifery service. In this respect its work seems to overlap that of the other maternity hospital which has become so well known because of the million-dollar donation of J. Pierpont Morgan.

OHIO.

Dr. Najib Taky-ud-Deen, Assistant-Surgeon. U. S. A., is ordered for duty to Columbus Barracks.

Dr. Raymond E. Whelan, Youngstown, has been promoted from acting asstistant-surgeon to captain and assistant-surgeon of volunteers.

Dr. August Ravogli, Cincinnati, has been appointed a member of the State Board of Registration, for a term of seven years, to succeed himself.

Dr. Jerome B. Thomas, Dayton, who has been for some time an acting assistant-surgeon in the army, has been made captain and assistant-surgeon of volunteers.

PENNSYLVANIA.

Dr. J. Linton Harkness, Philadelphia, has been appointed resident physician at the Pottstown Hospital.

Lancaster County Hospital for the Insane, which has been erected at a cost of $72,000, was opened March 13.

Dr. Fred R. Underwood, London, has received an appointment as acting-assistant surgeon in the army and has been ordered to report for duty at Fort Leavenworth, Kan.

The Pottstown Board of Health has adopted a resolution declaring tuberculosis contagious and placing it among the list of infectious diseases, and the public has been warned to take the same precautions as in case of typhoid fever and diphtheria.

Refuse Vaccination.—The teachers' committee of the school board of Harrisburg has been notified that 750 pupils in the public schools of that city refuse to comply with the state law requiring them to become vaccinated. They have been notified that if they fail to be vaccinated before March 20 they will be excluded from the schools.

Hospitals in Cities.—Judge J. D. Shafer, of Pittsburg, on March 16 handed down a decision regarding the erection of hospitals in built-up portions of cities to the effect that this law did not prevent hospitals from having additions made, but that it prohibited the erection of new hospitals. This decision may have an important bearing on the generous gift to Pittsburg, by the late Christopher Magee, providing for the construction of a large hospital in the residence portion of that city.

Philadelphia.

The annual prize of a complete "Surgical Anatomy" offered by Dr. John B. Deaver to the graduating class of the University of Pennsylvania, has been awarded to Albert Griffith Miller for his essay on "Appendicitis."

Dr. Robert P. Robins, who served as acting assistant surgeon and was in charge of the Second Reserve Hospital at Malate, near Manila and was made captain and assistant surgeon of volunteers a year later, has been promoted to major and surgeon of volunteers.

RHODE ISLAND.

A general hospital for Pawtucket and Central Falls is being strongly urged by the Pawtucket Medical Society.

The Boston Medical Library has received from Dr. Horatio R. Storer, Newport, a valuable collection of 2300 medical medals. It is to be known as the Storer Collection of Medical Medals, in memory of Dr. D. Humphrey Storer, father of the donor.

Medical Practice Act.—An act has been introduced in the house of representatives which provides that all applicants for authority to practice medicine will be compelled to take an examination instead of being admitted by diploma as at present. It gives the state board of health authority to grant certificates and provides for an appeal from the state board to the supreme court.

WASHINGTON.

Dr. Donald G. Russell, Spokane, has been reinstated as surgeon for the Great Northern Railway Company, and in addition has been appointed chief surgeon to the Spokane Falls and Northern and the Kootenai Valley and Bedlington and Nelson Railways.

Dr. James R. Yocum, Tacoma, president of the State Board of Health, has given the governor and legislature timely warning regarding precautions to be taken against the invasion of bubonic plague. He urges that the state board of health be empowered to establish such a system of quarantine inspection as will prevent the introduction of the plague at any port in the state, and insure its suppression should it creep in.

WISCONSIN.

Dr. William C. F. Witte, Milwaukee, has been critically ill from infection of a finger during an operation, but is now improving.

Dr. Charles E. Ide, formerly interne at Passavant Memorial Hospital, Chicago, has been appointed to a similar position in the Johnston Emergency Hospital, Milwaukee.

An unlicensed practitioner of Stanley, who was arrested a month ago for practicing medicine without a license, was fined $50, March 22, but the fine was remitted on his promise not to repeat the offense.

Mrs. Mary Deleglise, *Antigo*, has deeded a block of valuable land to be used as a hospital site, on the condition that a $10,000 hospital be erected thereon and that the institution shall care for her two invalid sons during their lives.

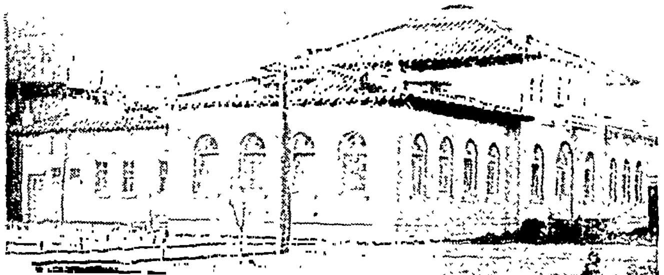
Dr. Gilbert E. Seaman, Milwaukee, has been commissioned assistant surgeon in the Wisconsin National Guard and assigned to the First Regiment. He had previously seen service in the Spanish-American war and in the Philippine Islands.

GENERAL.

Yellow Fever Precautions.—It having been brought to the attention of the Marine-Hospital Service that smallpox exists in an epidemic form at Progreso, Yucatan, the acting assistant surgeon of that service, formerly located at Vera Cruz, Mexico, has been transferred to Progreso, while another acting assistant surgeon has been transferred from Habana to Vera Cruz. The duties of both these officers will be to inspect all vessels leaving those ports for ports in the United States or its dependencies, and also to inspect the passengers and their baggage. All baggage which requires such treatment will be disinfected before shipment. This action was intended specially for the protection of Cuba.

Appointments.—Following the usual custom, the U. S. Marine-Hospital Service has detailed the following named acting assistant surgeons for duty at the fruit ports of Central and South America, during the coming close quarantine season: Paul Osterhout, Bocas del Toro, Colombia; D. W. Goodman, Port Limon, Costa Rica; W. K. Fort, Livingston, Guatemala; S. H. Backus, Puerto Cortez, Honduras; W. H. Carson, Bluefields, Nicaragua; R. H. Peters, Ceiba, Honduras; J. Grey Thomas, Belize, British Honduras. It will be the duty of these officers to supervise the loading of fruit at each of the ports mentioned, to inspect the vessels, their passengers and crews, and to disinfect such baggage as requires this treatment, with a view to preventing the introduction of yellow fever into the United States.

Emergency Hospital at the Pan-American Exposition.—In the hospital building, which has been located near the west end of the Mall, for the Pan-American Exposition, floor area is a prominent feature, and the free Spanish renaissance has been followed in the architectural work, with a tendency toward the old mission interpretation. The hospital has a frontage of 90 feet on the Mall, and the main wing a depth of 38 feet, being but one story high, except in the center, where it assumes the form of a square tower with a rounded top. This tower is two stories high, and bears two flagstaffs, one supporting the exposition flag, and the other the Red Cross banner. A rear wing, one story high, runs back from the center portion a distance of 56, with a width of 32 feet. A low wandering adobe mission house covered with heavy red tiling, may be readily imagined from the external architecture, but within everything is modern, and approved medical and surgical appliances have been selected with regard to their adaptability to emergency work and the exigencies that are likely to arise. The main office contains telephone and electrical annunciator, and messenger call service, etc. The first floor front contains, in the extreme western wing, two male wards with seven cots each, a bathroom, physicians' office, a morgue and a linen chest. The eastern wing contains a woman's ward, large enough to hold a dozen cots, with direct communication to the woman's bathroom. This wing also contains an office for the superintendent of nurses, a private physician's office, a linen closet and other conveniences. The upper story is intended for the use of the resident physician and the necessary attendants. It is fitted up with four pleasant, comfortable bed-rooms and a bath-room. The rear wing, extending back from the main entrance, contains the operating-room, sterilizing department and instrument cases. Immediately across the hall is the emergency bathroom and patients' waiting-room. Still farther down the corridor is located the kitchen, pantry and dining-room, which is intended for the use of patients only, as the members of the staff have their culinary department in the service building near by. In the extreme southern end of this wing is the storage room for the electrical ambulances, and this room also contains a station for recharging the batteries; electricity for this purpose being brought from an electric circuit provided for the electric launches on the Grand Canal. In addition to the two electrical ambulances, a steam or gasolin motor ambulance will be ready in case of a possible failure of the electrical current. The building is provided with natural gas for heating purposes and for cooking when necessary for the patients. Water, gas and electricity are carried to every part of the hospital in the most approved manner. Dr. Roswell Park is the director, Dr. Vertner Kenerson. deputy director, and Dr. Alexander Allen the resident physician. To March 1. 504 cases have been treated on the grounds, only one of which proved fatal. These include all forms of sickness and accidents to workmen employed upon the construction work. In this connection it is well to note that the number of cases treated at the Omaha Exposition was about three thousand, while the history of the hospital at the World's Fair in Chicago gives a total of 11,602 medical and surgical cases treated, with 69 deaths.



— HOSPITAL, — PAN-AMERICAN EXPOSITION

CANADA.

Death of Nurse.—A nurse of the Montreal Civic Hospital, while attending to her duties in that institution, recently contracted measles and died. and the unsanitary conditions of the hospital are held accountable for her death.

Memorial Building.—The honorary secretary of the Hamilton City Hospital Board has decided to erect, at his own expense, a new $5000 out-door building for that institution, in memory of his wife, who took an active interest in the affairs of this hospital.

Private Wards.—At the next meeting of the Medico-Chirurgical Society of Montreal the question of private wards at the General Hospital will come up for discussion. There is much feeling among members of the profession of that city at the present on this question.

Antivaccination Bill.—There is a bill now before the Ontario legislature providing that persons having religious objections to vaccination shall have the option of declining to be vaccinated. The Civic Committee of the legislature will make a vigorous fight against the bill.

Notification of Tuberculosis.—The board of health of the Province of Quebec now requires that every householder in whose home a death from pulmonary tuberculosis occurs, shall notify the secretary of the board within forty-eight hours thereafter. The municipality must then disinfect any compartments of the house that may have become contaminated by the patient.

Vital Statistics.—Quebec's death-rate from tuberculosis is 1.99 per 1000; Ottawa, 3.12; Montreal, 2.87; Toronto, 2.41; Kingston, 2.17; London (Ont.), 2.67; Paris, 4.9; New York. 3.60. In 1898, while the birth-rate in Ontario was 20.4, that in the province of Quebec was 35.7; in 1899, it was 33.46. The birth-rate of the province of Quebec is higher than that of all countries except Germany.

Montreal's Scarlet Fever.—The scarlet fever epidemic in Montreal continues unabated. For six months, from September last, the cases reported to the health office have numbered 1046, while the deaths for that period from this disease number 222. In 1894 the city experienced a similar outbreak and the cases numbered 1915. Only 159 have been treated at the Civic Hospital, and of these 46 have died.

Addition to McGill.—Another large addition is to be made to the medical building of McGill University, Montreal, and will greatly increase the accommodation of the present buildings. It will be four stories in height, with a suitable basement and a lecture room, museums and chemical laboratories. The total cost of the proposed addition will be defrayed by Lady Strathcona and the Hon. Mrs. Howard.

Toronto Societies.—The organization of an academy of medicine is again being agitated in Toronto. The city has three societies, the Clinical, the Toronto Medical and the Pathological Society, and in a medical population of nearly 500, neither can muster an average attendance of two dozen. It is thought that an academy of medicine would prove instrumental in producing more original medical thought in the city.

Victorian Nurses.—The annual meeting of the Montreal branch of the Victorian Order of Nurses took place in that city last week. The nursing staff varied from seven to three during the year; 529 patients were cared for and 6751 visits, in addition to 150 night calls were made. The fees derived from patients amounted to $782.50. The staff at present consists of six nurses. Professor Adami was re-elected secretary.

Amalgamation of Schools.—In regard to the negotiations pending toward the amalgamation of Trinity Medical College with the Toronto School of Medicine, the corporation of Trinity does not consider the scheme as proposed feasible. The College is, however, favorable to amalgamation on broad lines. The rejected proposal was that the teaching staffs of the two schools be consolidated without any reduction at the present, and that a re-arrangement be made within two years.

Missionary Hospitals.—A cottage hospital at Sifton has been completed and equipped, by private aid, Lady Minto being particularly generous. A Montreal woman has offered to build a second one, and Dr. Reid, the medical missionary among the Doukhobors and Gallicians, urges that it be established at Ethelbert, twenty miles from Sifton. He says another medical missionary will be necessary to carry on the work connected with the two hospitals among these people of the Northwest Territories.

Treatment of Inebriates.—The prospects that the proposed bill for the treatment of inebriates will go through the Ontario House of Assembly this session appears very slim. The bill has the approval of the premier and other members of the government, and has been endorsed by the inspectors of prisons and the warden of the central prison, who is a medical man. Still the government hangs back and does not introduce the measure, and the session is now near its close. The promoters of the bill are very outspoken at the action of the government.

LONDON.

The Commission on Arsenical Poisoning.

The royal commission appointed to investigate the recent epidemic of arsenical poisoning has held several sittings. Dr. Winen, medical officer of health of Manchester, said that it was safe to say that not less than 2000 cases had been seen by medical men in Manchester. Professor Hope, medical officer of health for Liverpool, said that he was one of the members of a small subcommittee appointed by the Liverpool medical institution to investigate the extent of the poisoning epidemic. About 100 cases were tabulated by the subcommittee, which were all treated in public institutions. Arsenic was found in the viscera in some cases and there was no doubt that the poisoning was due to consumption of beer. There are sixty breweries or wholesale beer-selling firms in Liverpool. Samples of beer were taken from all these, and arsenic was found in those from twenty.

The Polyclinic.

The second annual report of the Medical Graduates College and Polyclinic shows that there is ample room for extensive development, both charitable and professional, on the lines which the Polyclinic has laid down for itself. The council has decided to appoint corresponding associates in all the important cities of America, and the continent. It is also contemplated to expedite the spread of clinical knowledge by some means of association with the other polyclinics of the world, so that each may be able to learn the more important work carried on in the others. The annual dinner will be held on May 22, at which the Right Hon. A. J. Balfour, M.P., will preside. The subcommittees appointed to investigate leprosy, yaws, climatology and tuberculosis have held repeated meetings, and laid the foundation of what is hoped will prove useful information on these subjects. A most valuable feature of the Polyclinic is the Hutchinson Museum. It contains the enormous collections of portraits of disease, mostly in water-colors, made by Mr. Jonathan Hutchinson. The greater number are original. With the exception of the splendid collection of the St. Louis Hospital, Paris, disease in the living has never been illustrated on such an extensive scale. This museum, which may be described as his life-work, Mr. Hutchinson has presented to the Polyclinic. At one time the portraits formed his private museum at Park Crescent, where he held weekly clinics, which were rendered exceedingly instructive by the systematic use of the drawings to illustrate the malady of each patient. No one has insisted so much on the value of clinical illustrations of disease for purposes of instruction and even for investigation of disease, and certainly no clinician of any age or any country has made such use of them. Skin diseases, which lend themselves most readily to pictorial illustration, form the greater part of the portraits, but almost every disease which shows external changes capable of illustration is represented.

For an annual subscription of $5 a doctor has the use of the library and museum, admission to the consultations and clinical demonstrations which are held daily, and to special courses of lectures, permission to use the laboratory for private research on payment of a small fee, a copy (post-free) of the college journal, facilities for attendance at affiliated hospitals, reports at a nominal cost on sputum, blood, urine or morbid growths, the right to recommend patients for gratuitous consultations, and title to vote at general meetings. There are now 674 members and subscribers. Special tutorial classes are held in laryngology, ophthalmology, otology, applied anatomy, Roentgen rays, neurology, and clinical microscopy. For these a fee is charged. American practitioners in considerable number have availed themselves of the institution. The great advantage of the Polyclinic is that it brings to a focus in one institution, for the benefit of qualified practitioners, the best clinical teaching of the metropolis. The ordinary hospitals are devoted to the training of students, and the practitioner can there only pick up a few crumbs and feels himself very much *de trop*. The weak point of the Polyclinic is that it has no hospital of its own—no beds. Hence the practical teaching is confined to out-patients. To remedy this the Polyclinic has been affiliated with a number of the special hospitals, and some of the smaller general hospitals—at which there are no medical schools. A doctor can attend any of these daily for a month on payment of $5.

FOREIGN.

Albert's Successor.—The chair of surgery at Vienna left vacant by the death of Professor Albert, has been bestowed upon the professor of surgery at Königsberg, A. von Eiselsberg, a pupil and assistant of Billroth in his day.

Suspension of "Vratch."—The publishers of the leading Russian medical weekly, *Vratch*, have appointed Dr. Vladislawleff editor to succeed the recently deceased founder and editor, Professor Manassein. The publication will continue, as heretofore, until the end of the year when it will be suspended, as expressly stipulated in his will.

New Journal.—Prof. Japp. Sinclair, of Owen's College, Manchester, and others who are connected with gynecological and obstetrical work in England, are arranging for the publication of a monthly journal devoted to these branches. There is not, at present, a gynecological and obstetrical journal in Great Britain, except the quarterly published by the British Gynecological Society. It is thought that such a publication is needed and that it will be well supported.

Smallpox Epidemic at Glasgow.—The smallpox epidemic is seriously threatening the prospects of the success of the forthcoming Glasgow International Exhibition. The epidemic is the greatest in Glasgow for thirty years. Since it broke out there have been over 1000 cases and 134 deaths. In most of the fatal cases the patients were aged from 40 to 50 and were unprotected by vaccination. There are 370 patients now in hospital. In the past week 130 fresh cases have been admitted, 90 dismissed and 10 deaths have occurred. Additional sanitary inspectors have been appointed and a house-to-house visitation is being made to discover unvaccinated persons and to impress on all the necessity of re-vaccination. In the past fortnight 77,562 have been vaccinated. Mild cases of the disease are often regarded as chicken-pox or spots due to indigestion, and give great trouble to the health department, as they are difficult to discover and produce numerous "contacts" which cannot be traced.

Abandoning the Old Trousseau.—This famous Paris hospital for children is to be demolished and a street opened through the site. Its place is to be taken by three hospitals in different parts of the city. One of these, the Bretonneau, in Montmartre, is already completed and the little patients were transferred to it on March 8. The hospital occupies a triangular lot between three streets and faces a large cemetery on one side. It has a capacity of 244 beds and the building alone costs about $1600 per bed; $60,000 had to be spent on the foundations, owing to the slope of the site. Jayle, in an article in the *Presse Médicale*, criticizes the arrangements unfavorably, pointing out that the promiscuous mingling of the children at the one entrance invites contagion. The pavilions for contagious diseases are all connected by a gallery, except the one for diphtheria. He regrets that the opportunity was not seized to separate the contagious from other diseases, and devote one hospital exclusively to surgical cases, instead of combining all the services in each hospital. The two others will be opened this month; one will be known as the new Trousseau.

Progress of the Plague.—The census of Bombay City just taken shows a population of 770,000—a decrease of over 50,000 as compared with the census of ten year ago. This decrease is mainly due to the exodus which has occurred during the last two months of the plague epidemic. In Mauritius, for the week ending February 28, there were 12 new cases, of which 8 were fatal. The total deaths from plague were 18. The increase of plague at Capetown caused considerable alarm and anxiety. Recently four new cases were reported in one day. Rats have been found in the dockyard, dying of plague. Inoculation of the inhabitants is proceeding. The government has issued regulations preventing natives from leaving the Cape district without a pass, prohibiting shipowners from landing natives at Table Bay without permission, and compelling natives to move their location. One morning five corpses of colored persons dead from plague were found and ten colored persons suffering from plague sent to the hospital. A large number of "contacts" and suspects have been placed in quarantine. A hotel in the center of the city, in a grossly insanitary condition, in which a case of plague occurred, has been closed.

Association News.

Railroad Rates for the June Meeting of the American Medical Association.—The Committee on Transportation reports that the Western Passenger Association has granted the following rate for transportation through its territory for the St. Paul meeting of the AMERICAN MEDICAL ASSOCIATION: One fare (regular) plus $2 for its round trip from all points in the Western Passenger Association territory more than 200 miles from St. Paul. From points within that radius, one fare and one-third for the round trip. Tickets from points 200 miles and over from St. Paul are to be sold May 27 to June 3 inclusive, and from points within 200 miles of St. Paul May 27 to June 4 inclusive. Tickets are good for return leaving St. Paul May 29 to June 15 inclusive. These rates will be given to the other passenger associations by the Western Association for ticketing through. The Committee will endeavor to obtain a better rate with a stop-off privilege and a longer time limit, H. L. E. JOHNSON, M.D., Chairman Committee on Transportation.

Correspondence.

Illustrations with Articles.

ADIN, CAL., March 7, 1901.

To the Editor:—Can not the contributors to THE JOURNAL be induced to include drawings in their articles, as Dr. Stricker has with his article in the March 2 number? The articles now being published on middle ear diseases would be of unstated benefit to hundreds of young physicians who do not and can not get to see clinics of that nature. If they were accompanied by illustrations showing the anatomical parts and the different steps in the operative work of those who frequently meet and deal with them successfully, we would be far better prepared to deal with those unfortunate ones who fall into our hands as general practitioners.

Our knowledge is very limited at best, on the study of medicine and surgery, and the only way a great many of us have to learn it is by reading, being so situated that we can not go to hospitals and watch every step in operative work. Therefore, I believe the more experienced would remove a great stumbling block if they would give us drawings with their papers. Most of our text-books illustrate very well, but omit that which sometimes would be of the greatest benefit. For instance, take a leading work on appendicitis, and the author illustrates the pathology of the condition, and tells us all about the operation, saying that if we do not properly pack the wound, when there is suppuration, we will have done a bad job, but he does not give one drawing to show what he calls a properly packed wound. This leaves us to our imagination to understand from what we read, what a properly sutured appendiceal stump is and a properly packed cavity as well.

Yours truly, C. M. TINSMAN, M.D.

Seasickness: A Sure Preventive.

PARK CITY, UTAH, March 19, 1901.

To the Editor:—Apropos of the treatment of seasickness, given in THE JOURNAL of March 16, I offer the following: None seem to have a sure remedy of seasickness, and the main reliance appears to rest on massive doses of nerve sedatives. It is a question with many, which they would sooner prefer; the after-effects of the medicines or the seasickness. Dr. Rawlin's remedy to "elevate all the limbs" is, for good reason, impracticable, when it is remembered that, on a rough sea, the position of the body is constantly changing. Dr. Brunton's bandage affords some relief; still, a better remedy is to plant the palms of the two hands on the abdomen and press hard toward the spinal column; but the good effect of either expedient is only temporary. If any one desires to experience *genuine* seasickness and to try his remedies for seasickness, he should cross the North Sea during winter; compared with the Atlantic Ocean, the waves of the North Sea are short and choppy. I there tried a simple contrivance, which I have never seen mentioned in articles on seasickness, and which served me excellently. I simply made a hammock from a blanket. It matters not how much the ship plunges or rolls, the hammock will practically stand still and keep the horizontal position. As long as I stayed in my hammock I experienced no seasickness, but if I left it when the sea was rough, nausea soon came on; as soon as I returned to the hammock the sensation of illness passed off. E. VIKO, M.D.

The Edinburgh Tradition and Clinical Instruction.

ELIZABETH, ILL., March 20, 1901.

To the Editor:—The editorial on p. 670 of THE JOURNAL for March 9, on "The Edinburgh Tradition and Clinical Instruction," was read with much interest. I appreciated more fully, perhaps its importance from having been instructed in an institution where the students, from the time they matriculate, are obliged to devote one-half of each day to clinical bedside instruction. This has been the practice, since its foundation in 1834, of the medical department of the Tulane University, New Orleans. The great Charity Hospital, so closely associated with this school, has given the faculty the opportunity to give bedside instruction. Since 1868 it has been the fixed regulation to divide the students into sections, each of which is taken in charge by a clinical professor and his chief of clinic. Bedside instruction is given each day in the hospital wards. Each student in a ward is assigned to a bed, and during the daily visits of a section to these wards, the individual student may at any time be called upon by the clinical professor to make a diagnosis, suggest treatment and offer a prognosis. This is done before the entire section, and the clinical professor is always there to make criticisms.

Since mention has been made in the editorial, calling attention to the superior methods used in several other medical schools, not of this country, the publication of this letter will point out that in our own country too, the "Edinburgh Tradition," in some schools at least, is also an established method

Yours truly, PHILIP ARNOLD, M.D.

Medical Interstate Reciprocity.

DETROIT, MICH., March 23, 1901.

To the Editor:—In the interest of the movement aiming at interstate reciprocity for the license to practice medicine, and at uniform medical legislation, on the basis of uniform medical education, the undersigned, as member of various committees, asks all secretaries of medical boards to be kind enough to favor him with information in regard to the present status within their jurisdiction. It is especially important to know: 1, whether the respective medical law contains the reciprocity clause; 2, whether the profession in the respective political division is sufficiently familiar with the subject matters; 3, whether any amendments have been added to the law, since May, 1900, or whether there exists any intention to amend the law. EMIL AMBERG, M.D.

270 Woodward Avenue.

The Yellow Fever in Port Limon, Costa Rica, in 1900. Reply to Surgeon-General Wyman, of the U. S. Marine-Hospital Service.

New Orleans, La., March 23, 1901.

To the Editor:—In reply to Surgeon-General Wyman's communication in The Journal of March 16 I will simply state that the fact that the representatives of the U. S. Marine-Hospital Service did not agree in the diagnosis of the representative of the Louisiana State Board of Health is no proof that Limon was not infected as early as July 17, 1900. The proof that the resident medical inspector of the Louisiana board was correct is that a few weeks later the natural evolution of the infection was so patent that it forced itself on the representatives of the service. Edmond Souchon, M.D.
President, Louisiana State Board of Health.

Married.

Sherman A. Allen, M.D., Imogene, Iowa, to Mrs. Isabel Linton, of Shenandoah, Iowa, March 13.

H. Stephen Hill, M.D., Seattle, Wash., to Miss Marie F. La Barraque, of San Francisco, at Seattle, March 4.

Carl Johnson Holman, M.D., St. Clair, Minn., to Eudora Madge Timmerman, M.D., of Mankato, Minn., March 14.

Deaths and Obituaries.

William F. Channing, M.D., University of Pennsylvania, Philadelphia, 1844, died in the Perry Hospital, Boston, March 19, aged 81. He lived in Providence, R. I., for a time after his graduation, and lately returned to Boston, after a residence for sixteen years in Pasadena, Cal., He published some of the first books on medical electricity, and was rather an inventor than a practitioner. The alarm telegraph, the hand receiver on the telephone and the marine railway were among his inventions.

Sherman A. Yule, M.D., Omaha Medical College, 1897, acting assistant surgeon, U .S. army, died from nephritis, in the Philippine Islands, March 4, aged 33. At the outbreak of the Spanish-American War he enlisted in the Funston Rifles and went to San Francisco. There he obtained his discharge in order to serve as an acting-assistant surgeon. He was on duty two years in Honolulu, and then was ordered to the Philippines.

James W. H. Lovejoy, M.D., Jefferson Medical College, Philadelphia, 1851, died at his home in Washington, D. C., March 18, aged 76. He served several times as president of the local medical society, was a member of the American Medical Association, one of the incorporators of the Garfield Hospital, and had been dean of the faculty of the Medical Department of Georgetown University.

Walter W. Medill, M.D., Medical College of Indiana, Indianapolis, 1889, a resident of Denver, Colo., for ten years, and a member of the American Medical Association, died at his home in Denver, March 14, from pneumonia, after an illness of one week.

George C. Venable, M.D., University of Pennsylvania, Philadelphia, 1850, for 40 years a practitioner of Charlotte County, Va., and for the past ten years a resident of Lynchburg, died at his home in that city, March 14, aged 73.

John K. Clark, M.D., Missouri Medical College, St. Louis, 1882, a member of the American Medical Association, and for many years a resident of Chillicothe, Mo., died at his home in Denver, Colo., March 9.

Rufus D. Sperry, M.D., Albany Medical College, who practiced for many years at Red Oak, Iowa, died at the home of his son in Omaha, after a ten years' illness from paralysis, March 11, aged 81.

George C. Chapman, M.D., Vanderbilt University, Nashville, Tenn., was struck by a falling telephone pole and killed during the cyclone that devastated Birmingham, Ala., March 25.

Stephen F. Gano, M.D., Transylvania University, Lexington, Ky., for many years a leading physician of Scott County, died at his home in Georgetown, March 23, aged 94.

William Watson, M.D., College of Physicians and Surgeons, Baltimore, Ind., 1886, died at his home in Allegheny, Pa., March 16, after a prolonged illness.

Jacob J. Smith, M.D., Jefferson Medical College, 1864, a well-known physician of La Crosse, Wis., dropped dead from heart disease, March 16, aged 63.

Charles L. Stoddard, M.D., Pennsylvania Medical College, Philadelphia, 1860, formerly of La Crosse, Wis., died at Colton, Cal., March 16, aged 65.

Henry Worthington, M.D., College of Physicians and Surgeons, New York, 1874, died at his residence in Los Angeles, Cal., March 12, aged 49.

J. Frederick Hedgcock, M.D., Southern Medical College, Atlanta, Ga., 1895, died from pneumonia, at his home in Lake City, Fla., March 13.

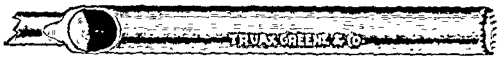
Charles H. Bowen, M.D., Columbian University, Washington, D. C., 1862, died at his home in Washington, D. C., March 12.

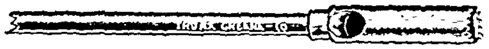
New Instrument.

An Effective Electric Trephine.

S. S. BISHOP, B.S., M.D.
CHICAGO.

The accompanying cut shows the exact size of two electric tubular saws, or trephines, the smaller of which is the one in common use in surgery of the nose and its connecting cavities. This instrument is capable of rendering excellent service where little work is to be done; but it has several serious faults which the writer has overcome in devising the larger trephine.





In removing a large and long spur from the nasal septum, it is necessary to trephine through the center of the spur, then above and below the center in lines parallel with the first section, if the small trephine is employed. If the spur is longer than the tube of the trephine, the instrument ceases to cut as soon as it penetrates the distance of its own length, for the portion of the spur that enters the tube fails to pass out of the counter-opening as fast as it enters the tube, and it prevents the saw from entering further. This necessitates withdrawing the trephine, removing the cut portion of the spur and readjusting the trephine for proceeding with the cutting. Meanwhile the field of operation is likely to become covered with blood, and more time is lost in removing this in order to see what tissues one is attacking.

The large trephine has a counter-opening as capacious as can be made without sacrificing the strength of the tube, so as to allow the contents to pass out as fast as they enter. It is much longer than the average spur, so that it would operate more satisfactorily than the small trephine, generally, even if the counter-opening were smaller. Its generous diameter renders it necessary to drive the instrument through the tissues fewer times in order to remove a given amount of growth.

In operating on the maxillary antrum the large trephine gives better results than the other. By passing the large instrument once into the antrum a canal of good size is obtained. Formerly I have passed the small one twice, and more times in some cases, before obtaining a sufficient opening for free drainage and efficient treatment. The large trephine is well adapted for opening the frontal sinus and the mastoid antrum.

Miscellany.

Calculus Weighing Twenty-two Ounces.—The *Indian Medical Gazette* reports a case of removal of a vesical calculus weighing twenty-two ounces from a man of 50. It consisted of uric acid and earthy phosphates.

The First Lithotomy in France.—The *Jour. de Méd.* relates that the physicians and surgeons of Paris besought King Louis XI to let them experiment on a criminal condemned to death, in order to learn the technique of removing calculi. The king consented, and the operation was performed in public, January, 1474, in the open air in a cemetery. After the surgeons had finished, the intestines were replaced, the wound sutured and the patient soon recovered.

Etiology of Malaria.—C. Schwalbe, of Los Angeles, opposes the mosquito theory of malarial infection and, in a brochure njust received, *Beitraege z. Malaria-Frage*, No. 1, calls attention to discrepancies in the researches to date. He suggests that no attempts have yet been made to inoculate persons with malaria on the open sea, for instance, absolutely free from suspicion of malarial infection from any other source. The failure of all efforts to determine the germ of infection in the air has forced scientists to evolve the mosquito theory, but no one will maintain that we are yet fully acquainted with the chemical composition of the air under all circumstances. The causal agent of malarial infection may yet be found to be a certain gas or gases in the atmosphere. The air close to the ground during the night has never yet been studied with all the appliances of modern science in malarial regions, to his knowledge. The scientist who will be able to enter upon this research under these conditions will be, he thinks, the fortunate one who will solve the problem of the etiology of malaria.

Varicocele in Army Surgical Practice.—Surgeon-General Sternberg has issued a circular, dated Feb. 27, 1901, inviting the attention of medical officers of the Army to the cure of varicocele by surgical intervention. The circular states that the rule laid down in Tripler's Manual should govern medical officers in the examination of recruits, viz., that a candidate for enlistment should be rejected if he has a varicocele which is larger than the sound testicle. If, however, upon a subsequent examination after enlistment a recruit is found to have a varicocele as large or larger than the sound testicle, and complaint is made of disability arising from it, this should not be considered a cause for discharge but for surgical treatment. A former decision of the War Department is cited to the effect that, except in case of a capital operation involving the risk of life, a soldier can not refuse to submit to medical treatment or surgical operation without subjecting himself to trial by court-martial for wilfully avoiding treatment the purpose of which is to enable him to perform the duties for which he enlisted. The circular publishes reports on operative procedures in such cases, at the General Hospital Presidio, San Francisco, by Lieut. Col. A. C. Girard, deputy surgeon-general; at the General Hospital, Washington Barracks, D. C., by Captain W. C. Borden, assistant surgeon, U. S. Army; at the U. S. Military Academy, West Point, N. Y., by Major J. M. Banister, surgeon, U. S. Army, and at Fort Snelling, Minn., by Captain A. E. Bradley, assistant surgeon, U. S. Army. The operation by incision over the pubes on the line of the inguinal canal has given uniformly better results in the hands of these surgeons than by incision through the scrotum. An aseptic field can be obtained with greater certainty above than below the pubes. Major Banister concludes that: 1. The operation for the radical cure of varicocele by the high incision with ligation a [illegible] cision of the veins is one of the most successful of surgi [illegible] cedures. 2. The operation is without risk to life in t [illegible] of a patient without disease of vital organs. 3. It [illegible] adapted to the military service. 4. No soldier otherwise [illegible] should be discharged from service on account of varicoce [illegible] It should be the duty of the medical department of the [illegible] to cure these cases, compelling compliance on the part of th [illegible] dier where objection is urged. Captain Borden is of opinion that a varicocele which produces disability and w [illegible] has originated in the service should not be considered a ca [illegible] for discharge, but should always be operated on, provided the operator is so situated that he can be reasonably sure of asepsis. The circular closes with an extract from a paper by Lieut.-Col. N. Senn, chief surgeon, U. S. Vols., chief of operating staff with the army in the field, from his work on the "Medico-Surgical Aspects of the Spanish-American War," in which the writer comments on the frequency of the existence of varicocele in young men who presented themselves for enlistment. In 9815 recruits, 2078 were affected with varicocele. His experience was to the effect that of itself the varicocele seldom gave rise to any noticeable disturbance, and that the patients who applied for treatment did so in consequence of nervous disturbances entirely separate and independent of the enlarged spermatic veins.

Necessity for a Closer Union of the Medical Profession in Missouri.—Efforts are being made by the American Medical Association to bring about a closer union of the regular medical societies in the United States. At the last meeting of the Association a committee was appointed to consider and recommend a plan for a thorough organization of the profession of this country. At the present time there are about thirteen hundred regular medical societies in the United States, most of which were organized, and are acting, independently of each other. The result is a lack of uniformity or concert of action among these bodies. In most of the states no systematic attempt has been made to organize local societies on a specific plan, the result being no uniformity of purpose or action in matters pertaining to the welfare of the profession in the state, consequently there can be no united effort made—political or otherwise. If the profession is to become a united body the beginning must be made in the county medical society. These must be organized in every county of the state and in harmonious relation to the state organization, and this in turn with the national organization. The difficulties which have beset the efforts to secure legislation for the regulation of the practice of the healing art in this state show that the opposition on the part of those whose objectionable practices would be prohibited by it are strongly organized and are powerful, and have with them the powerful influence of the lay press to which they are a source of profit. It has also shown that the profession must be so organized and united as to utilize its fullest power for the purpose of combatting this influence and it must not be content to leave to the efforts of a few courageous and self-sacrificing members the burden of defeating a strong opposition which is daily becoming more powerful and which is daily making it more difficult to secure adequate protective legislation. The tendency in the commercial world is to a closer union with a concentration of energy and the development of its greatest forces. Such a plan must be followed by the profession; it must be brought to a realization of the power and influence that it can wield through a close and a thoroughly organized union of its members, and such an organization must be effected, *it has become a necessity.* The politician hearkeneth eagerly to the strongest influence, be that what it may, and the ability to reward and the fear of retaliation are the [illegible]s that most frequently govern the actions of the averag [illegible] ian. In order for the profession to accomplish its [illegible] ts an [illegible] cure its greatest influence, a medical soci [illegible] ed in every county in the state to whic [illegible] practitioner in that county. Eve [illegible] in the state must be interested in [illegible] profession and every county society [illegible] working relation w [illegible] the state [illegible] of president of [illegible] asso [illegible] simply as an [illegible] positi [illegible] ecutive head [illegible] ition [illegible] of [illegible] the [illegible] o [illegible] ve [illegible] pro- [illegible] To [illegible] mu [illegible] it [illegible]

Book Notices.

The Essentials of Practical Bacteriology. An Elementary Laboratory Book for Students and Practitioners. By H. J. Curtis, B. S., and M.D. (Lond.), F.R.C.S., Late Surgical Registrar, University College Hospital. Cloth. Pp. 291. Price, $2.50. New York and Bombay: Longmans, Green & Co. 1900.

This work will be found of practical value to the student or to the clinician who desires to refresh his memory in regard to details of investigation of certain subjects. Simple and reliable methods of staining are given, and the minutest detail is gone into in describing methods. The book is well illustrated.

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Miscellany.

Calculus Weighing Twenty-two Ounces.—The *Indian Medical Gazette* reports a case of removal of a vesical calculus weighing twenty-two ounces from a man of 50. It consisted of uric acid and earthy phosphates.

The First Lithotomy in France.—The *Jour. de Méd.* relates that the physicians and surgeons of Paris besought King Louis XI to let them experiment on a criminal condemned to death, in order to learn the technique of removing calculi. The king consented, and the operation was performed in public, January, 1474, in the open air in a cemetery. After the surgeons had finished, the intestines were replaced, the wound sutured and the patient soon recovered.

Etiology of Malaria.—C. Schwalbe, of Los Angeles, opposes the mosquito theory of malarial infection and, in a brochure njust received, *Beitraege z. Malaria-Frage*, No. 1, calls attention to discrepancies in the researches to date. He suggests that no attempts have yet been made to inoculate persons with malaria on the open sea, for instance, absolutely free from suspicion of malarial infection from any other source. The failure of all efforts to determine the germ of infection in the air has forced scientists to evolve the mosquito theory, but no one will maintain that we are yet fully acquainted with the chemical composition of the air under all circumstances. The causal agent of malarial infection may yet be found to be a certain gas or gases in the atmosphere. The air close to the ground during the night has never yet been studied with all the appliances of modern science in malarial regions, to his knowledge. The scientist who will be able to enter upon this research under these conditions will be, he thinks, the fortunate one who will solve the problem of the etiology of malaria.

Varicocele in Army Surgical Practice.—Surgeon-General Sternberg has issued a circular, dated Feb. 27, 1901, inviting the attention of medical officers of the Army to the cure of varicocele by surgical intervention. The circular states that the rule laid down in Tripler's Manual should govern medical officers in the examination of recruits, viz., that a candidate for enlistment should be rejected if he has a varicocele which is larger than the sound testicle. If, however, upon a subsequent examination after enlistment a recruit is found to have a varicocele as large or larger than the sound testicle, and complaint is made of disability arising from it, this should not be considered a cause for discharge but for surgical treatment. A former decision of the War Department is cited to the effect that, except in case of a capital operation involving the risk of life, a soldier can not refuse to submit to medical treatment or surgical operation without subjecting himself to trial by court-martial for wilfully avoiding treatment the purpose of which is to enable him to perform the duties for which he enlisted. The circular publishes reports on operative procedures in such cases, at the General Hospital Presidio, San Francisco, by Lieut. Col. A. C. Girard, deputy surgeon-general; at the General Hospital, Washington Barracks, D. C., by Captain W. C. Borden, assistant surgeon, U. S. Army; at the U. S. Military Academy, West Point, N. Y., by Major J. M. Banister, surgeon, U. S. Army, and at Fort Snelling, Minn., by Captain A. E. Bradley, assistant surgeon, U. S. Army. The operation by incision over the pubes on the line of the inguinal canal has given uniformly better results in the hands of these surgeons than by incision through the scrotum. An aseptic field can be obtained with greater certainty above than below the pubes. Major Banister concludes that: 1. The operation for the radical cure of varicocele by the high incision with ligation and excision of the veins is one of the most successful of surgical procedures. 2. The operation is without risk to life in the case of a patient without disease of vital organs. 3. It is well adapted to the military service. 4. No soldier otherwise sound should be discharged from service on account of varicocele. 5. It should be the duty of the medical department of the army to cure these cases, compelling compliance on the part of the soldier where objection is urged. Captain Borden is of the opinion that a varicocele which produces disability and which has originated in the service should not be considered a cause for discharge, but should always be operated on, provided the operator is so situated that he can be reasonably sure of asepsis. The circular closes with an extract from a paper by Lieut.-Col. N. Senn, chief surgeon, U. S. Vols., chief of operating staff with the army in the field, from his work on the "Medico-Surgical Aspects of the Spanish-American War," in which the writer comments on the frequency of the existence of varicocele in young men who presented themselves for enlistment. In 9815 recruits, 2078 were affected with varicocele. His experience was to the effect that of itself the varicocele seldom gave rise to any noticeable disturbance, and that the patients who applied for treatment did so in consequence of nervous disturbances entirely separate and independent of the enlarged spermatic veins.

Necessity for a Closer Union of the Medical Profession in Missouri.—Efforts are being made by the AMERICAN MEDICAL ASSOCIATION to bring about a closer union of the regular medical societies in the United States. At the last meeting of the ASSOCIATION a committee was appointed to consider and recommend a plan for a thorough organization of the profession of this country. At the present time there are about thirteen hundred regular medical societies in the United States, most of which were organized, and are acting, independently of each other. The result is a lack of uniformity or concert of action among these bodies. In most of the states no systematic attempt has been made to organize local societies on a specific plan, the result being no uniformity of purpose or action in matters pertaining to the welfare of the profession in the state, consequently there can be no united effort made—political or otherwise. If the profession is to become a united body the beginning must be made in the county medical society. These must be organized in every county of the state and in harmonious relation to the state organization, and this in turn with the national organization. The difficulties which have beset the efforts to secure legislation for the regulation of the practice of the healing art in this state show that the opposition on the part of those whose objectionable practices would be prohibited by it are strongly organized and are powerful, and have with them the powerful influence of the lay press to which they are a source of profit. It has also shown that the profession must be so organized and united as to utilize its fullest power for the purpose of combatting this influence and it must not be content to leave to the efforts of a few courageous and self-sacrificing members the burden of defeating a strong opposition which is daily becoming more powerful and which is daily making it more difficult to secure adequate protective legislation. The tendency in the commercial world is to a closer union with a concentration of energy and the development of its greatest forces. Such a plan must be followed by the profession; it must be brought to a realization of the power and influence that it can wield through a close and a thoroughly organized union of its members, and such an organization must be effected, *it has become a necessity*. The politician hearkeneth eagerly to the strongest influence, be that what it may, and the ability to reward and the fear of retaliation are the motives that most frequently govern the actions of the average politician. In order for the profession to accomplish its best results and secure its greatest influence, a medical society must be organized in every county in the state to which should belong every regular practitioner in that county. Every member of the profession in the state must be interested in the general welfare of the profession and every county society must be brought into a close working relation with the state organization. . . . The office of president of the state association should not be regarded simply as an honorary position, but as the administrative and executive head of the profession in the state, and the occupant of that position should be chosen for his fitness for it, and should be a man of good executive ability, one who may be able to promote the organization of county societies and to weld them in a strong cohesive body. To obtain recognition for its demands the profession must make its influence felt—politically if need be—and it must act as an unit in all matter of interest to it. To do this it must organize, and that thoroughly.—*St. Louis Cour. of Med.*, March.

Book Notices.

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Lipomyoma of Uterus.

Dr. J. H. M. Knox had obtained this rare specimen, in an operation by Dr. Kelly, from a woman aged 62, the mother of thirteen children, the youngest being 24. She had had three miscarriages, the last twenty-six years before. The first symptoms occurred nine years ago, with a serous discharge lasting three weeks, but no pain. After some years the discharge reappeared, and again some weeks before the operation, which was done about sixteen months ago. There was never any pain, except on one occasion, when she had sharp pains like those of labor. The whole pelvis was filled with a firm mass extending to the umbilicus. There was nothing suggestive of anything more than an ordinary myoma until examination in the laboratory. Numerous oil globules could be pressed out of the mass, which was composed almost equally of muscular and fatty tissue. There was no fatty degeneration of the muscle fibers. Numerous eosinophilic cells were found grounded around the vessels, and a sessile polyp extended into the uterine cavity. The speaker reviewed the literature, in which very few such cases are to be found, and said that the specimen was of interest both because of its rarity and because the appearance may be due to misplaced embryologic elements.

Dr. Thos. S. Cullen, in 600 specimens of myoma in the hospital, had seen nothing like this. He said he had met at least three cases of malignant degeneration of a uterine myoma.

Dr. Wm. H. Welch thought the explanation given by Dr. Knox correct, and he had lately examined a myoma, sent by Dr. Geo. Ben Johnston, of Richmond, in which, mingled with the muscular elements, were true bone and much mucoid tissue.

Advances Made in Medical and Surgical Diagnosis by the Roentgen Method.

Dr. Charles Lester Leonard, of Philadelphia, presented a paper illustrated by lantern projections. The chief advantages are in fractures and calculi. In fracture without pain we can obtain more information than by manipulation. In impacted fracture diagnosis is impossible in any other way without great damage. It also aids greatly in securing coaptation and reducing. It may point out when reduction can be affected and when operation is necessary. The rule used to be to treat all suspected fractures as such; this is only justifiable now where we can not secure a Roentgen examination.

With this method we can absolutely detect or exclude all calculi. Early operation in pelvic or ureteral calculus, is of great advantage. Of 153 suspected cases examined, in 44 calculi were found; 25 of these were in the ureter. In one case several phleboliths in the veins of the broad ligament were shown in the plate.

Dr. H. A. Kelly said that the apparatus was indispensable and he had provided himself with one for private use and also for teaching purposes. In one case where he had removed a stone from the ureter, he was surprised to find that several more remained behind.

CHICAGO PATHOLOGICAL SOCIETY.

Meeting held March 11.

Dr. L. Hektoen, President.

Primitive Splenomegaly or Anemia Splenica.

Dr. Maximilian Herzog read a paper based on a study of the literature of this subject and on two cases in which Dr. M. L. Harris performed splenectomy. Particularly one of the two cases, both of which got well after the removal of the spleen, had been studied carefully as two years had elapsed since the operation. Before the operation there had been present in this case a marked diminution of the erythrocytes, a low color index and an absolute and relative reduction in the number of the leukocytes. The blood had improved very much since splenectomy, and there had developed a marked eosinophilia. An examination of the spleens removed showed a marked endothelial proliferation with enlargement of the blood lymph-spaces—pulp-spaces. Herzog stated that he had in vain sought for many destroyed blood-corpuscles inside of lymph-endothelia, a picture as it is, for instance, found in typhoid fever. Considering the fact that the blood condition had always improved in all cases of splenomegaly in which splenectomy had been performed provided the patient did not die from the operation, it appeared conclusive that the changes in the spleen must be looked upon as the primary factor in the disease. We therefore must look to the pathologic changes in the spleen as the cause of the blood destruction. From an examination of the two cases, as well as from a study of the literature, it appears that no evidence can be found that lymphatic endothelia destroy the blood by directly taking up blood-corpuscles. Herzog, therefore, advances the theory that lymphatic endothelia of the spleen and of lymph glands secrete an erythrolytic ferment, and in this manner destroy old and worthless blood-corpuscles. We have in splenomegaly an enormous endothelial proliferation, and probably in consequence an enormously increased production of the erythrolytic ferment, which, when present in such a large amount, destroys many healthy blood-corpuscles. If the spleen is removed, the source of the increased production of the erythrolytic enzyme is removed, and the blood improves rapidly and permanently.

Dr. W. A. Evans referred to a case of Dr. Ferguson's, in which there occurred petechial spots in the skin and where the spleen became smaller before death. He spoke of a case reported by Dr. Dalton, before the London Clinical Society, which was clinically one of splenic anemia, but at autopsy the enlargement of the spleen was discovered to depend on passive congestion, due to constriction by an anomalous colon.

Dr. Leo Loeb declined to accept the theory of an enzyme which destroys the red blood cells in the spleen.

Dr. E. H. Ochsner referred to a patient who clinically presented splenic anemia, and who improved for a time after the spleen was removed, but subsequently died. There were a few small tuberculous peritracheal glands found at autopsy. A possible infection in such cases must always be considered.

Dr. B. W. Sippy spoke of the similarity of these cases to the ordinary lymphatic pseudoleukemia as regards blood changes, general asthenia, etc., a similar enlargement of the spleen also being observed. In many cases of splenic anemia there is enlargement of the lymph glands, although it may be slight. In all cases the bone marrow has been converted into a fetal condition, like that found in many cases of pseudoleukemia lymphatica. He objects to the term "splenic anemia," and considers the one "splenic pseudoleukemia" to be the proper one. He believes the primary cause can not be positively located in the enlargement of the spleen. In the case described by him, the fibrous changes were much more marked than in Dr. Herzog's. This he thinks may depend upon the longer duration of the disease.

Dr. P. Keyes said that in the specimens of Dr. Herzog, the proliferation involves all the structures of the spleen, and such a condition can not be due to a primary proliferation of any one element, as the endothelium.

Dr. T. R. Crowder presented sections of an amyloid spleen with unusually distinct endothelial linings in the vascular spaces.

Dr. M. Herzog, in closing, said that he did not claim that there was proliferation of the endothelium alone, but that the increase in the endothelium was enormous, so much so that the condition had been mistaken for an endothelioma. Dalton's case had not been considered, as it was too indefinite. One reason for separating these cases from lymphatic pseudoleukemia is because they are curable by operation.

Pancreas Annulare.

Dr. Theo. Tieken exhibited a specimen of pancreas annulare, with resulting constriction of the duodenum so that a large fusiform sacculation of the latter had formed.

Blastomycosis.

Dr. H. M. Ricketts presented specimens of experimental general blastomycosis in the lung of a dog, produced by the intravenous inoculation of an organism obtained from a case of blastomycosis of the human skin.

MEDICAL SOCIETY OF RUSH MEDICAL COLLEGE.

Meeting held March 4.

Acute Ulcerative Endocarditis.

Dr. Theodore Tieken demonstrated a specimen of this condition, with a large perforation in the posterior segment of the aortic valve, and almost complete destruction of the anterior cusp by the ulcerative process. The valves were covered with large vegetations, many of which were calcified. The mitral valves were likewise studded with vegetations, which extended down the *chordæ tendineæ* as far as the apex of the papillary muscles. In addition to the ulcerative process on the aortic valves, an area of ulceration was found at the attachments of the bases of the semilunar valves which extended through the walls of the aorta, into the peri-aortic space. The heart was greatly hypertrophied and showed some interstitial fibroid changes. In the same case were found an annular pancreas and a sacculation of the duodenum, caused by the constriction of the intestinal lumen by a band of glandular substances, springing from the head of the pancreas in such a manner as to entirely encircle the lower part of the duodenum—descending portion, forming a true "pancreas annulare." The pancreas was normal in size and consistency, and cut with about normal resistance. The head measured 4 cm. in its vertical and 3.5 cm. in its transverse diameter. The annular portion measured 2.75 cm. at its narrowest portion and was 1 cm. in thickness. The ducts were in every way normal, and no abnormality was noticed in its vascular supply. In a hurried review of the literature he was able to find only four other cases reported to date. Although the patient had been under observation for nearly a year, no symptoms referring to the gastro-intestinal tract were ever manifested during life.

Obstruction of Popliteal Artery.

Dr. James B. Herrick presented a specimen showing obstruction at the bifurcation of the popliteal artery, produced by an embolus from the heart, the seat of chronic valvular and myocardial disease.

Suprarenal Tumor.

Dr. Herrick also showed a specimen of a suprarenal tumor where the tumor mass had invaded the inferior vena cava. This finding, which had been suspected during life, explained the early occurrence of an edema of the lower extremities, and had been one determining factor in deciding against operation for the removal of the kidney.

Lymphatic Leukemia.

Dr. Herrick also showed specimens of blood from six cases of lymphatic leukemia. He referred to the unknown etiology of the disease, to its clinical separation into acute and chronic varieties, to the resemblance of the former to an acute infection and of the latter to Hodgkin's disease, and also dwelt upon the variations in the blood picture as shown in his six cases. The statement so frequently made, that in lymphatic leukemia nucleated red corpuscles are very rare, was disproven in four of the six cases, three acute and one chronic, and specimens were exhibited showing numerous nucleated red blood-corpuscles. He spoke also of the great variety in the picture presented by the blood, according as the larger or smaller mononuclear forms prevailed in a given case. In one case, a rapidly acute one, there had been about 2 per cent. of myelocytes. Another interesting combination he had seen was that of a patient with carcinoma of the neck and jaw, with diffuse hyperplastic enlargement of the lymph glands and with the typical findings of a lymphatic leukemia, the blood counts never showing less than 100,000 leucocytes.

Interparietal and Intraparietal Aneurysms.

Dr. L. Hektoen presented several specimens illustrating interparietal and intraparietal extension into the heart of aneurysm of the beginning of the aorta, and of dissecting aneurysm of the heart. He described the spatium periaorticum cordis of Vestberg. The spatium periaorticum cordis is situated at the root of the aorta, and is covered by the reflection of the epicardium as it passes over the aorta behind the auricles and forms the floor of the sinus transversus pericardii. It is in this space that interparietal dissecting aneurysms of the heart most frequently are found by rupture or ulceration of its internal wall, the aorta. The specimens demonstrated illustrated the formation of dissecting aneurysm in this space as a consequence of ulcerative endocarditis of the aortic valves, and in consequence of the rupture into the space of small aneurysms in the beginning of the aorta developing primarily upon the basis of a syphilitic aortitis.

He also demonstrated a specimen of a large interparietal aneurysm in the right ventricle, originating in the sinus Valsalvæ of the aorta, and also an aneurysm originating in the left ventricle by two small openings, and forming a large cavity upon the lateral and posterior aspects of the left ventricle. The post-mortem in this case was made by Dr. Le Count, and the question as to the dissecting character of this aneurysm was discussed, the conclusion reached being that the aneurysm most likely originated in a suppurative process in the myocardium, and probably reached its present large extent in consequence of more or less dissection of the walls of the left ventricle.

Relief of Portal Obstruction.

Dr. H. Gideon Wells reported two cases illustrating relief of portal obstruction in hepatic cirrhosis by plastic peritonitis. In one the condition was found at autopsy, there having been no evidences of obstruction during life: the numerous adhesions of a chronic fibrous peritonitis were found largely replaced by thin-walled vessels, full of venous blood, up to the size of a crow's quill. The portal obstruction was due to an obstructive biliary cirrhosis from impaction of a calculus in the common bile-duct. The other case was that of a man with excessive ascites of about twenty months' duration, requiring frequent tapping, and due to alcoholic atrophic cirrhosis. A large umbilical hernia, resulting from the ascites, became strangulated and was reduced by operation. No attempt was made to establish a plastic peritonitis, and there was but little intra-abdominal manipulation, yet the ascites never recurred up to the time of the patient's death, eleven months later from carcinoma of the pharynx.

OMAHA (NEB.) MEDICAL SOCIETY.

Meeting held March 12.

Need for More Thorough Physical Examination of the Abdomen.

Dr. W. O. Bridges, in a paper on this subject, pointed out that the neglect of abdominal examination is a serious omission. He suggested a few of the important points of information, lost not only in diseases of the abdominal organs, but also in the failure to observe changes in abdominal organs which are a part of the pathology of constitutional diseases, and changes due to diseases of distant organs. We are too apt to draw conclusions from answers given and to fail to make painstaking examinations of organs so accessible. We are often asked why appendicitis, movable kidney and gastroptosis are more common now than formerly. The proper answer should be that they only seem more common because, hitherto, physicians have been too neglectful to investigate the abdomen. The literature on these conditions has been written, practically, in the last dozen years. The life insurance examination blank should require the same investigation as to the liver, spleen, kidneys, stomach and appendix as is now demanded for the heart and the lungs. The technique of examination is really very simple. Anesthesia will seldom be required. Inspection reveals some things. Distention or retraction, and prominence of veins should always be noticed. The character of the respiration, if abdominal, should be observed.

In many infectious diseases, particularly malarial and typhoid fevers, changes in the liver and the spleen are easily discoverable by palpation and percussion. These changes should be searched for daily, for the degree of change is a guide to the probable severity and duration of the disease. The persistence of a palpable spleen in typhoid fever, after cessation of fever, should warn of relapse or a sequel, and forbid the getting up of the patient, no matter how favorable everything else is. In malaria, specific treatment should be carried on until both spleen and liver are no longer palpable. Chronic diseases of the heart and lungs frequently produce great enlargement of the liver and spleen, and fluid in the abdominal cavity long before there is edema of the feet. In the anemias, the spleen should always be examined, for the grave cases only show enlargement of this organ. In many instances, affections of the abdominal organs produce effects elsewhere which are often very misleading. Precordial pain is often the result of pressure from a dilated stomach. Dyspnea, cyanosis, edema of the feet with coldness and numbness, irregularity of pulse, all can arise from enlargement of the liver or spleen, excessive tympanites, or an abdominal tumor. The pain of biliary colic is often referred to the right shoulder, and hepatitis, peri-hepatitis and abscess of the liver may simulate affections of the right pleura. A supposed pneumothorax has been proven to be hernia of the intestines through the diaphragm. Pus from an appendiceal abscess will sometimes burrow to the diaphragm and press it upward, simulating an empyema, or it may perforate the diaphragm and produce a purulent pleurisy. We are all familiar with melancholia and hypochondriasis as the result of disturbances of the stomach and liver. Dilatation of the stomach, gastroenteroptosis and movable kidney disturb greatly the nervous systems of women, and many a hysterical woman, whose affection is due to one of these conditions, travels the rounds without the real cause of her hysteria being detected. Reading Tolstoi's "Ivan Ilyitch" will give one a better idea of the relation of an abdominal organ to the nervous system than will a medical text-book, for the hero had a movable kidney, and the details of his life-history are painted far better than they could have been by the most celebrated neurologist.

A few illustrative cases were reported. Miss S., aged 22, had been a sufferer for months. She had cough, fever, sweats, emaciation, absence of respiratory function in the lower right lung. A diagnosis of pulmonary tuberculosis had been made. Close interrogation developed an early history of pain in the abdomen. An abdominal examination revealed a large appendiceal abscess, operated on later by Dr. Jonas, with slow but complete restoration to health.

Mrs. K., aged 34, gave a history of former and recent biliary colic without jaundice. She had fever, rapid pulse, nausea, vomiting and marked nervous symptoms. Two physicians in attendance had not made careful physical examination, and an extremely tender, movable egg-shaped tumor was found in the gall-bladder area. The diagnosis of empyema of the gall-cyst was proven by an operation made by Dr. Summers, which resulted in recovery.

Mrs. H., aged 30, was supposed to have passed through a malarial fever with slow convalescence. She had abdominal pain, nausea, vomiting, chills, fever, sweats, and jaundice; these had been present for several weeks. Examination showed a movable, tender tumor beneath the liver, the size of a small orange. It was diagnosed as a distended gall-bladder. Operation by Dr. Jonas proved the mass to be an empyema of the cyst, with calculi. Recovery took place.

Mr. H., aged 36, a hypochondriac of the worst kind, had been treated for years for dyspepsia, and had become an expert with a stomach-tube and was a superior dietist. After failure of treatment based on analyses of the stomach-contents, a more careful physical examination revealed a movable kidney of the third degree. This seemed to be the key to the situation, and Dr. Summers made a nephrorrhaphy which promised well for a time. Relapse, however, took place with the kidney fixed and later a surgeon in another city found many adhesions near the junction of the pylorus and duodenum, which he liberated. Again improvement followed for a short time. The latest report is that a third surgeon opened the gall-bladder and removed thirty to forty calculi, and the results of this are not yet known.

Crushing Injury.

Dr. Bridges briefly reported the case of a man who was caught between the bumpers of two cars, and suffered from crushing of the chest. His attention was called to the patient by reason of the fact that, during inspiration, there was recession of the right chest with expansion of the left; during expiration, expansion of the right chest and recession of the left.

WILLS' HOSPITAL OPHTHALMIC SOCIETY.

Meeting held in Philadelphia, March 11.

Dr. S. D. Risley in the chair.

Sympathetic Ophthalmitis.

Dr. Frank Fisher presented a case of sympathetic ophthalmitis coming on after a panophthalmitis which had followed a cataract extraction, the patient being 64 years of age. He laid special stress on the age at which the ophthalmitis had developed, and the long period of time elapsing between the condition and the cataract extraction.

Dr. William Zentmayer inquired whether it is not rare for the disease to evidence itself in cases in which there is panophthalmitis. In answer to Dr. John T. Krall's question whether the fundus of the sympathizing eye had been examined,

Dr. Fisher stated that when he saw the case the eye-ground had become invisible.

Dr. S. D. Risley asked whether subconjunctival injections of solutions of chlorid of sodium had ever been tried by any of the members of the staff.

Dr. Walter L. Pyle expressed belief that the occurrence of sympathetic inflammation after panophthalmitis depends on the amount of destruction of the globe. He believes that if there is decided scleral rupture and escape of most of the intraocular contents, sympathetic ophthalmitis is not likely to follow.

Dr. Charles A. Oliver said that all attempts to do useful iridectomy in such cases are futile, the iris-tissue being brittle and friable; while any obtained good results are rapidly lost. He has been successful in several instances, by either the Gritchett-Story operation or Tyrrell's method of drilling. He has never employed subconjunctival injections to any advantage, nor as yet made use of large doses of the alkalies, but if lymph formation and circulation are good the former method might be of assistance.

False Maculae.

Dr. George C. Harlan presented a case of false maculæ. The patient, a white man, 23 years of age, whose family and personal histories were negative, had squinted since childhood. He could use either eye. On Feb. 23, 1900, he was admitted to the hospital with an esotropia of 40 degrees, preferably fixing with the left eye. A tenotomy of the right internal rectus muscle, with an advancement of the corresponding external rectus, was done, leaving a residual squint of about 10 degrees. Two weeks later similar operations were performed on the left eye, with the result of an overcorrection of 10 degrees. On January 23, of this year, the perimeter showed 10 degrees of esotropia. The Maddox rod gave 20 degrees of crossed diplopia. At this time a tenotomy of the right external rectus muscle was done, allowing both eyes to fix centrally, but the crossed diplopia remained the same. One week later it was found that the esotropia of 10 degrees still persisted. There was no monocular polyopia. During fixation with both eyes a crossed diplopia of between 8 and 16 degrees, with a hypophoria of 0.5 to 2 degrees could be determined.

Extraction of Foreign Body from Vitreous.

Dr. C. Berens presented a case of successful extraction of foreign body from the vitreous chamber, with a resultant vision of 6/9 of normal. The patient, a man 38 years old, came to the hospital on Feb. 12, 1901, with the history of having been struck in the left eye one hour previously, by a chipping from a hammer. The external wound, which was vertical and 3 mm. in size, was situated in the cornea, 5 mm. from the nasal limbus. There was a corresponding wound in the iris. The pupil was 4 mm. in size, and central, and the iris reacted well. Under atropin the pupil enlarged to 8 mm. There were numerous vitreous opacities anteriorly, and some posteriorly. The details of the eyeground were slightly veiled. Far down and to the inside two semilunar areas, one of which at first showed a suspiciously bright point, could be seen. Under the Doctor's guidance, the senior resident surgeon enlarged the corneal wound down and in, did an iridectomy, and placed a magnet tip toward the side of the retinal laceration. Three unsuccessful attempts were made in this direction. Dr. Berens took the tip and inserted it twice, the second time down and out, recovering a piece of steel from that locality. Atropin was instilled and a bandage applied. On the next day there was slight reaction, but no pain. Two days later there was a moderate injection. At this time the patient could tell time on a watch, at one-half meter's distance. In eight days the eye was quiet, and vision equalled 6/20 of normal. The eyeground could be distinctly seen. Four days after this vision had arisen to 6/9 of normal, and the eye was quiet.

Double Coloboma.

Dr. C. A. Oliver exhibited a case of double coloboma of the iris, chorioid and optic nerve, with unusually small corneæ in an Italian girl of 16. As far as could be ascertained, there was no history of inheritance, nor were there any other signs of congenital malformation present. The colobomata were in their usual positions downward and slightly inward, those of the right eye being the larger. The characteristic curvilinear extension of the retinal vessels along the borders of the colobomatous areas could be plainly seen. The surfaces of the colobomata of the fundus, which were on a much deeper level than the rest of the eye-grounds, were quite ectatic in places. Refraction in the uninvolved macular regions was myopic and slightly astigmatic. Corrected vision equalled about two-thirds of normal. The visual fields showed defects corresponding with the fundus abnormalities. Both optic nerve heads were considerably enlarged. The retinæ in the colobomatous areas were visible as thin, almost transparent, membranes over and in which a few small vessels could be traced. The case was particularly interesting in the fact that, in spite of the apparent microphthalmus, the eyeballs were enormously lengthened in their anteroposterior diameters, giving high degrees of myopic refraction.

Spontaneous Extrusion of Iron from Eyeball.

Dr. Oliver also showed a patient from whom a chip of iron had been spontaneously extruded from the eyeball two years after its entrance into the crystalline lens, through the cornea and the iris. No reaction followed the expulsion of the foreign body. The lens itself had been studded with brilliant cholesterin crystals for more than a year.

Plastic Operation in Symblepharon.

Dr. C. Berens presented a case showing the recent effects of plastic operation for symblepharon, in which the conjunctiva of the upper lid had been adherent to the cornea over more than two-thirds of its surface, entire freedom of motion being restored to the globe.

Interstitial Keratitis

Dr. Oliver also gave a brief account of a case of interstitial keratitis occurring in the left eye of a man of 24, suffering from other stigmata of hereditary syphilis. He had treated and cured the patient's right eye for a similar attack of keratitis some six months previously. The point of interest in the case consisted in the fact that at the time of the patient's second admission to the hospital, some three weeks previously, the senior resident surgeon discovered a sloughing chancroid involving almost the entire foreskin of the patient's penis, necessitating excision of the sloughing part of the organ.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held March 13.

Dr. George Erety Shoemaker in the chair.

Appendicitis and Cystic Ovary.

Dr. C. F. Nassau reported and presented specimens from a case of appendicitis and cystic ovary. The patient at one time had given the history of extra-uterine pregnancy, and a soft fluctuating mass had been found in the abdomen. An operation had been done and the uterus was found to have no supports. Later the patient suffered from uterine hemorrhages and the odor characteristic of carcinoma was present. The abdomen was again opened and a perforation of the appendix found. It was noticeable that seven weeks previous to the operation the right ovary had been healthy, but it had within that time undergone cystic degeneration and was several times the size of the normal organ.

Case of Appendicitis.

Dr. Mordecai Price reported a case that, a few days before, showed abdominal symptoms with great distention. The patient had taken enormous quantities of purgative medicines without avail. He was entirely unable to pass gas from the bowel. The patient died March 12, and at the autopsy a perforation of the appendix was found. The duodenum showed induration, and it might have been malignant in character. Another obstruction was in the region of the appendix, and thus the ilium was obstructed at both ends.

Postpartum Metastatic Panophthalmitis.

Dr. W. L. Pyle read a paper on this topic. He stated that this condition is rare in this country. The symptoms are usually manifested within the first fifteen days after delivery. Unilateral panophthalmitis is the most common, and this may occur after normal labor. Early ocular symptoms may begin by loss of vision, slight hypopyon, burning of the orbit, and finally an abscess forms followed by destruction of sight. The condition is essentially a septic one, and pyogenic microorganisms of different kinds have been discovered. The prognosis as to vision is hopeless. The treatment in the early stages consists in the instillations of atropin, and the application of hot compresses. Should an abscess form, it should be incised and drained carefully. The speaker detailed a case.

Dr. W. Reber said he had seen two cases of metastatic ophthalmia. He believes the usual seat of infection is in the choroid.

Obstetric Forceps.

Dr. R. C. Norris made some remarks on obstetric forceps employed by the general practitioner, and also on treatment of arrested position of the occiput. He thinks the employment of obstetric forceps during labor should be regarded as a major operation, and as of equal importance with an abdominal section. Absolute sterilization should be employed. The instruments should be placed preferably in boiling water for at least ten minutes. The hands should be sterilized, first with soap and water, and afterward with bichlorid solution. It is a mistake to think that sterilization can be made complete by simply laying the instruments in an antiseptic fluid. The vagina must be thoroughly scrubbed with soap and water, but a vaginal douche is not necessary unless a foul discharge has occurred. In forceps delivery rubber gloves should be employed. In all cases previous to the application of the forceps the position of the child must be determined. The head should be delivered through the vaginal ring, by means of the forceps. In 83 per cent. of the cases in which he had been called in consultation by general practitioners, the occiput was in a posterior position and failed to rotate anteriorly. One of the most common causes for this is incomplete flexion of the head. In some of these cases, external and internal manipulations are frequently insufficient to correct the faulty position. The reversed forceps operation should only be employed by a skilled obstetrician. When flexion is incomplete, backward rotation of the occiput is prone to occur, and in these cases forceps are useful as tractors. As rotators, he has more recently come to use the solid blade forceps of the Tucker pattern. Reversed forceps as rotators should be condemned.

Treatment of Placenta Previa.

Dr. Charles P. Noble read a paper entitled "The General Considerations of Treatment of Placenta Previa." He reviewed the literature on the subject. The mortality to the child is probably 50 per cent. and to the mother 5 per cent. The induction of premature labor is one of the most important plans of treatment. About the seventh month of gestation, the hemorrhage is severe and, if life is endangered. pregnancy may be terminated. Prior to this period, if the hemorrhage is recurrent in character the same procedure may be carried out. If the cervix is dilated the fingers may be inserted and a Barnes bag may be introduced and inflated by means of a syringe. It is always advisable to determine beforehand how much water the bag will hold. If hemorrhage is profound, version may be done. If the placenta is marginal, it may be left to Nature, as advised by Murphy. The rapidity of the fetal heart indicates the condition of the child. In these cases there is always increased liability to infection, and the parts should be sterilized as far as possible. Rubber gloves are to be recommended.

Cesarean Section in Placenta Previa.

Dr. George M. Boyd read a paper on "Indications for Cesarean Section in Placenta Previa." At the Philadelphia Lying-in Charity, placenta previa occurs in about 1 to 170 deliveries. The speaker would recommend that an examination under ether be made in order to determine the position of the fetus, as well as dilatation of the soft parts.

Dr. Barton Cooke Hirst said it is unnecessary to exaggerate the dangers of occipito-posterior positions, since this condition occurs in probably 25 per cent. of cases of labor, and of this number there are probably only 5 per cent. which failed to rotate. He has known of cases of this position in which forcible rotation of the head has not been followed by rotation of the body. In certain instances in which there has been damage to the pelvic floor, even without a tear, he has put in stitches to restore strength to the parts.

As to the treatment of placenta previa, he has met with twenty-four cases without having lost any. He thinks the usual mortality to the child is about 50 per cent. and to the mother 1 per cent. He does not consider Cesarean section necessary in these cases.

Dr. W. Reynolds Willson said that it is immaterial whether the blades of the forceps are applied to the sides of the child's head or not, in many cases. He could not agree with Dr. Norris in rotation by means of forceps, when the occiput is in a posterior position, because of the danger to the mother. As to the treatment of placenta previa, we should consider this condition in two classes: 1, those which might be called emergency cases; and 2, those which can be watched. In many of these cases it is unnecessary to resort to artificial dilatation, since this has been usually accomplished when the case is seen. Death generally results from shock in placenta previa.

Dr. Mordecai Price, as to the use of forceps, believes that these instruments do more harm than good to the child. He has never seen a Simpson forceps when slipped. As to the treatment of placenta previa, he believes that pregnancy should be terminated at once. If the placenta is centrally located, he believes in going straight through it. There is no hope through delay. To do Cesarean section is carrying it too far.

Dr. Stricker Coles believes that in cases of posterior positions of the occiput the most important thing to do is secure flexion.

Dr. J. M. Fisher said it is often difficult to make a diagnosis of the exact position of the fetus. He has seen only two cases in which the occiput failed to rotate anteriorly.

THE CHICAGO LARYNGOLOGICAL AND CLIMATOLOGICAL SOCIETY.

Meeting held February 28.

The President, Dr. Melville T. Hardie, in the chair.

Thyroid Tissue in Trachea.

Dr. Otto T. Freer exhibited a patient with typical thyroid tissue in the trachea. He had shown the patient three years previously.

Functional Tests of Hearing.

Dr. W. L. Ballenger referred to the controversies regarding the value of the functional tests in the diagnosis and prognosis of aural diseases, pointing out that much of the discussion has arisen on account of exceptions to the general rules, and that the continuous and increasing use of these tests by otologists is a fair indication of their recognized utility. He next laid down the physiologic facts of hearing, aural and bone conduction, and the principles underlying the tests, the range of normal hearing, the impairment in hearing low or high tones according as disease affects the conduction or perceptive apparatus respectively, and the difference between bone and air conduction in normal and in pathologic states. In the application of the tests constant practice is essential to estimate correctly their indications, hence the necessity of their routine utilization.

The various tests were reviewed. The most valuable physiologic methods are, he thinks, those with tuning-forks and whistles, and the best outfit for making a complete test of the range of hearing is the Bezold-Edelmann set. The Weber test he finds most reliable in unilateral middle ear disease, somewhat less so in labyrinthine disease, and least of all in chronic middle ear affections. The Schwalbach test was also described, and its modification, the Rinne, which, while not as reliable as the Weber, should always be used with the others. If in examination there is a correspondence between the results of the Weber, Schwalbach and Rinne tests, the latter is an additional proof of the pathologic condition present. Also the nonaccordance of the tests may lead to valuable deductions sometimes as to the locality of the disease. The tuning-fork best suited for the Rinne test is C^2 512, although one two octaves higher may be used. Unlike the Weber test, low forks are not satisfactory.

The author's personal experience with the Gelle test does not warrant him in expressing an opinion as to its value. According to Politzer, it is of value only in very severe deafness, and Ballenger thinks this is also true of Bing's test, No. 1. Bing's second test was also described, as well as the condition recently denominated spongifying of the labyrinth, but which was first described by Bezold twelve years ago.

In conclusion, Ballenger says that he has found many of these tests he describes of great value, though in many cases the information they give can also be obtained without their aid. In special cases they are of particular utility.

Dr. J. Holinger said that from the characteristic restriction of the function of the hip-joint we make the diagnosis of hip-joint disease. From restrictions of the function of the eye the oculist makes nearly 75 per cent. of his diagnoses. Hearing tests for diagnostic purposes are very recent. Those spoken of were mostly known before the seventies of the past century. But it was Professor Bezold who brought a system into those tests, and Bezold and Siebenmann proved by post-mortems that the system upon which they based their diagnosis was correct.

To test the hearing watches have been abandoned very largely, because they are not uniform. They can not, therefore, give results which allow comparison. Why not use the voice as long as we know its range is comparatively limited, and we always have it at our disposal? The essayist makes a distinct difference all through and gives some tests for middle ear disease; others for diseases of the labyrinth, etc. These tests vary considerably, owing to the condition of the middle ear or of the drum. Therefore, the examination with the funnel must precede. The differential diagnosis between disease of the Eustachian tube and an affection of the labyrinth or oval window can be made by comparing the results of all examinations with the normal. In an affection of the tube, if the drumhead is retracted and the middle ear comparatively emptied of air, we get three distinct symptoms by the tuning-fork tests, which are the same as in spongifying of the labyrinth. First we have negative Rinne; then an increase of bone conduction for the lower sounds; then a decided lack of hearing for the lower sounds by air conduction. The moment we inflate the middle ear through the catheter we create normal conditions in cases of affection of the tube. We have normal Rinne; we have normal bone conduction and normal lower sound limits. In spongifying of the labyrinth there is no change after inflation. Whenever we use these different tests we must ascertain first the condition of the drumhead. The test of Gelle was referred to by Dr. Ballenger. In the works of Bezold it did not find place. He dropped it for good reasons. The test is quite indefinite.

The essayist has told us that spongifying of the labyrinth occurs mostly at from 18 to 30 years of age. I would like to lay stress on the point that it *begins* at that time, continues for a longer or shorter period, and remains stationary thereafter. This is an important point to remember.

The three cardinal tests for spongifying of the labyrinth are negative Rinne, increase of bone conduction for A tuning-fork and the loss of the lower sound limit in normal condition of the drumhead.

DR. ALBERT H. ANDREWS said there are certain inaccuracies in most of the tests described. He finds the watch test of very little value, except in recording the changes which occur in the course of treatment or in the progress of ear disease. With regard to tuning-forks, each one has an individuality of its own. He has a number of forks that are C^2 512, but with one, with which he has made a great many experiments, the average relation in the normal ear between bone conduction and air conduction is in the relation of about five to six, bone conduction being about five-sixths of the time of air conduction. With another fork having the same number of vibrations per second, bone conduction is less than one-half that of air conduction.

He emphasized the point made by Dr. Ballenger, that in reporting functional tests it is necessary to determine and report the characteristics of the fork used in order that we may have a proper understanding of the tests given. As to functional tests with the voice, conversational tones range from about 80 to 256 vibrations a second, while the extreme limits of the human voice run from perhaps 64 to 1000. In testing the hearing ability for conversation, forks should be used ranging from 68 to 256.

DR. WILLIAM E. CASSELBERRY suggested that the essayist state what he considers the proper distance to hold the fork from the ear in testing air conduction. The results which will be obtained, especially with the Rinne test, will vary according to the distance at which the fork is held from the ear. In border-line cases a positive Rinne might become negative Rinne if the fork be held some distance from the meatus. The usual inexact instructions are to hold the fork opposite the meatus—it might be 1 cm. from the meatus, or many centimeters, and still be opposite.

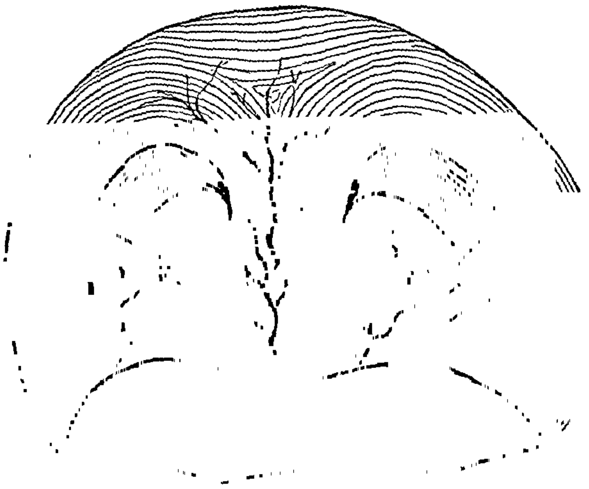

FIGURE 1.

DR. BALLENGER, closing, said, in reference to Dr. Holinger's remarks concerning the stapedius muscle, that he only mentioned the opinion of Rumbold, and not his own. As to the watch having practically been dropped as a test, he is not using it as much as formerly. It is of some value, however, as a test for ascertaining the progress that is being made during the course of treatment. Referring to the remark of Dr. Andrews that his fork shows a relationship on the average of five for bone conduction and six for air conduction, he said that such an instrument is poorly adapted for making the Weber, Rinne and Schwaback tests. The voice test is all right as a means of determining how well a patient hears conversation, but it is of comparatively little value in testing for diagnosis. It is of some value in testing the progress and course of the disease while under observation.

In reply to Dr. Casselberry, he said that his practice is to hold the fork near the ear and a little bit forward, say within one-quarter of an inch, care being exercised to avoid touching the hairs about the concha. The fork should be held so as to bring both prongs as near as possible. In this way the tone of the fork is heard at its maximum.

A Suggestion Concerning Uvulotomy.

DR. W. E. CASSELBERRY presented this topic, saying, in part: It is understood that chronic elongation of the uvula and relaxation of the soft palate are features of chronic pharyngitis, nasopharyngitis and rhinitis. It is in part secondary to these conditions and in part the conjoined effect of identical causes. The etiology includes recurrent acute attacks of rhinopharyngitis, contiguous tonsil disease, nasal stenosis, tobacco irritation and chronic pharyngitis incidental to digestive derangement and nutritional disorders such as rheumatism and gout. A complexity of causes is often operative in the same case.

The hypernutrition which affects the uvula and velum, like that of the posterior pharyngeal wall, has its origin in persistent hyperemia. Congestion leads to an exudation of leucocytes and a proliferation of the connective tissue cells of the submucosa. It excites hypersecretion and, in turn, the "hawking habit" serves, in part, to maintain congestion. Greville McDonald has called attention to the large number of glands imbedded on the posterior surface of the soft palate. In addition to the hyperplasia of the submucosa it is inferred that constant congestion of the subjacent muscular structures and their peripheral motor nerves, especially the levatores and tensores palati, leads to sluggishness of contractility and an ultimate fixation of the muscular fibers in their relaxed state. Moreover, the paresis in certain cases is attributable to pressure as from a very large adenoid growth and posterior enlargement of the inferior turbinated bodies.

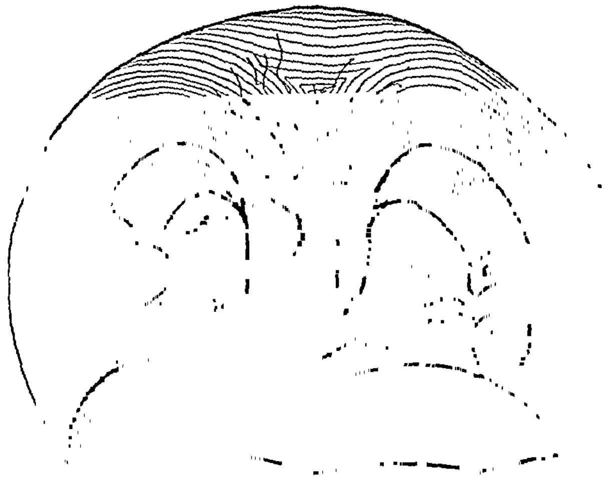

FIGURE 2.

Instead of hypernutrition the paretic palate may be actually thinner than normal, as in association with atrophic pharyngitis and in anemic emaciated states.

Regarding the uvula itself, at times the hypernutrition results only in increased length, its original diameter being approximately maintained, but in other cases, especially with chronic pharyngitis in plethoric persons, the uvula grows thick as well as long. The surplus growth near the tip may consist only of mucous membrane and connective tissue, but when much lengthened, and particularly in the thick variety, fibers of the relaxed and hypertrophied azygos uvulæ muscles are found well down in the elongated uvula, and require to be cut through in making an abscission.

Speech is plainly defective in extreme degrees of enfeebled palate resembling that of cleft-palate: *g* is substituted for *k*, as "gill" for "kill" and *d*, *b* and *s* are difficult to accentuate. The patient talks through his nose, the post-palatine space remaining too open. This defect should be distinguished from the "dead voice" of adenoid vegetations and nasal obstruction, although the two may be conjoined. Public speakers suffer from throat fatigue by reason of the unconscious extramuscular effort needed to raise the palate to a proper plane in speaking, thus conducing to chronic laryngitis. The singing voice is impaired in similar ways.

Snoring is another annoying symptom, caused by the vibration of the paretic velum while impinging on the base of the tongue. It is more common during oral respiration, but sometimes occurs with the mouth closed.

Treatment—He considered treatment in general and pointed out that, first or last, one resorts to amputation of a part of the uvula. The old method consists simply of a square amputation by scissors or uvulotome, an effort being made to slant the cut somewhat upward and backward. The stump which is left is broad, flat and firm at the end, instead of a rounded *tip of yielding consistency. The mucosa retracts, leaving a* bundle of sensitive muscular fibers exposed. The healing is prolonged, the swelling considerable and the after-pain severe. The stump may remain sensitive for several weeks. In one case the patient was conscious of it for months thereafter, complaining of the impression of something in his throat worse than before. These inconveniences may be largely avoided by the following simple expedient: The first step in the operation is practically the same as by the old method, except that the uvula is *grasped by the retaining forceps a trifle below the* exact point of desired abscission. The forceps are locked and the uvula abscised by scissors just above the forceps. The author's uvulotomy scissors answer especially well. The mucous membrane now retracts somewhat, and the next step is to make quickly a second abscission of the protruding bundle of muscular fibers. It is caught by serrated forceps drawn still further out from the retracted mucosa, and this time the muscle alone cut through. There is left a protruding edge of mucous membrane *which folds around the stump like a* circular flap, and in part covers its lower end. Thus cicatrization is hastened, the after-pain and swelling lessened, and the result is a more naturally rounded soft-tipped extremity. Fig. 1 represents the elongated uvula; Fig. 2, the stump after the first abscission with protruding muscular fibers; Fig. 3, grasping the muscular fibers and drawing them out from the retracting mucosa preparatory to the second abscission; Fig. 4, the circular flap folding around the stump after the second abscission.

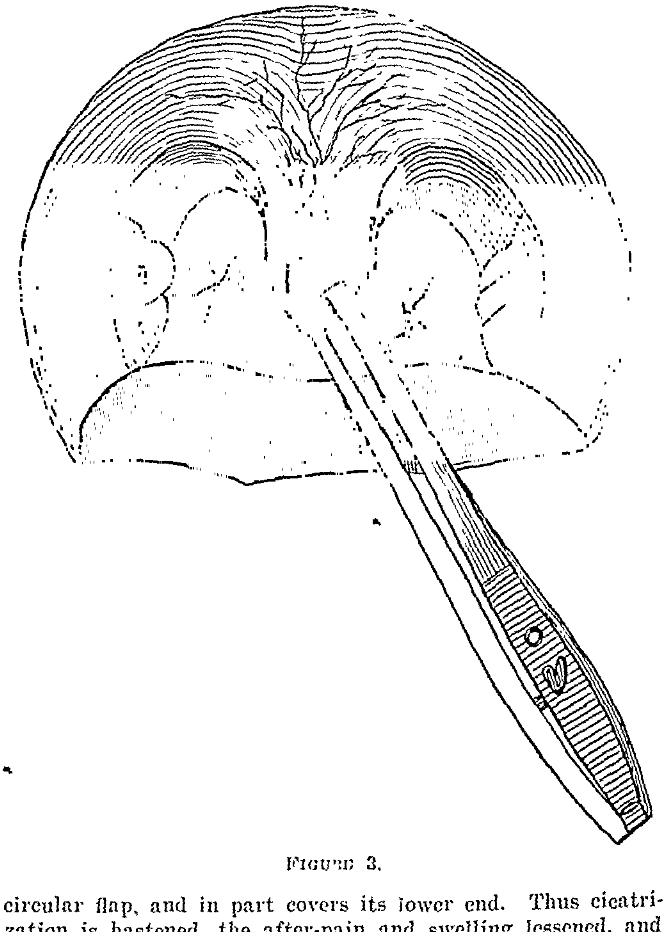

Figure 3.

Case of Nitrous Oxid and Ether Anesthesia for Tonsillotomy and Adenotomy.

Dr. W. E. Casselberry also reported a case, pointing out that the purpose of the combination is to hasten unconsciousness and thus, by lessening the *quantity of ether absorbed, by* from two to four ounces, to render ether anesthesia still safer, especially with regard to *elimination by the kidneys. For the* same reason, revival is quickened. Incidentally, time is saved, disagreeable sensations are obviated and the subsequent nausea minimized. The case reported showed *only the general feasi*bility of adapting the gas-ether combination by the open method to the *needs of the operation for conjoined adenoid* growth and hypertrophy of the tonsils.

Preliminary Report on Adrenalin.

Dr. W. E. Casselberry also presented this report, referring first to the extract of suprarenal gland and its action, saying that a medicament of such decided and much needed powers should possess a broad usefulness, but the inconveniences of the preparations heretofore supplied have served to limit its application. The most minute care is necessary to make and maintain the aqueous extract sterile. The development in it, *of organisms of putrefaction*, is hindered but not prevented by various antiseptics. It is both alleged and denied that uncertainty attends its administration by the stomach, but all agree that its use hypodermically is liable to result in abscesses. Hence efforts have been made from time to time to isolate its active principles.

He described adrenalin, a derivative, evidently an active principle, whose exact nature is not given. It is a *gray*, stable, amorphous powder, insoluble in strong alcohol, ether, *almond oil and albolene, and only sparingly soluble in water,* *about 1 to 5000. For practical use it is furnished in the form* of adrenalin chlorid dissolved in normal salt solution 1 to 1000, 1 to 5000 and 1 to 10,000, and from this he infers that the active principle acts as a base, uniting with acids to form salts. The adrenalin chlorid is more soluble in water, but is not a stable salt in dry form. The adrenalin chlorid solution is clear, colorless, odorless, sterile, stable if protected from light, and non-irritating to mucous membranes. When exposed to light for some days, or to heat, it undergoes some change which renders the solution pinkish in color and the strength less. When applied locally it exerts identically the *same vasoconstrictor influence* as the aqueous adrenal extract. Sprayed into the nostrils in the strength of 1 to 10,000, it produces at *once a visible change from turgidity* to compactness of the turbinated tissues, and a decided pallor of the mucous surfaces. *In the strength of 1 to 1000, or even 1 to* 5000, it has the same power to limit hemorrhage during operations upon spurs and deviations of the septum, and in pharyngeal operations. It is equally an aid in the treatment of epistaxis. It may be substituted for cocain in all cases in which an ischemic but not anesthetic effect is desired, e. g., to facilitate inspection of the deeper recesses of the nasal cavities and to increase access by cleansing solutions. Unlike cocain, it has little or no cerebral stimulant effect, exciting no desire for more beyond *the local relief afforded by it, hence* he thinks it is unlikely to lead to a habit.

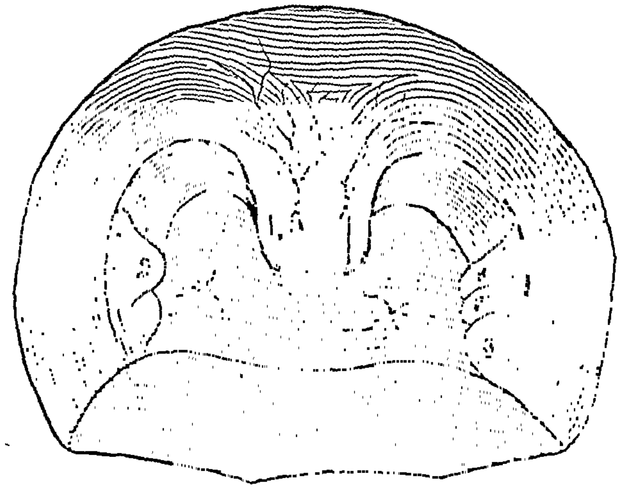

Figure 4.

Like cocain, its retractile effect on vascular tissue is *followed* by a reaction or subsequent turgescence, which varies in time and degree in accordance with the freedom of application, the extent of previous turgescence and other conditions. Thus, in acute rhinitis it has acted admirably in certain cases and seemed to aggravate others because of this reaction. It pales the congested mucosa in acute laryngitis and acute tracheitis, affording a corresponding temporary relief to the symptoms and hastening recovery. For this purpose he has shaken thoroughly together one-third aqueous solution of adrenalin chlorid, 1 to 1000, and two-thirds oil-vaselin, which mixture can be inhaled through the larynx in the form of spray. In like manner it should afford relief to those cases of asthma which are associated with bronchitis and vasomotor paresis, although he thinks there is little reason to expect an effect on cases of asthma in which spasm of the bronchioles is the major element. It is not chemically incompatible with the commonly used alkaline and antiseptic solutions, and it remains active in such solutions, at least for a time. The adrenalin may be rubbed up with vaselin, to form an ointment, or mixed with stearate of zinc, powdered starch or sugar-of-milk to make nasal or laryngeal insufflation powders. Its internal and hypodermic uses present fair fields for future observation.

Dr. Edwin Pynchon described his method of procedure in uvulotomy, as follows: Assuming that the uvula should be three-eighths of an inch long, he examines it and finds that it is three-quarters of an inch long. He then takes hold of its tip, with a suitable forceps, and stretches it until it is double that length, when, by using a curved shears such as is used by gynecologists for vesicovaginal fistula operations, and with the concave surface of the shears upward, he makes a curved cut, beginning in the middle and cutting backward and upward so the cut is finished up near the base of the uvula. Having done this he finds the muscular tissue shrinks more than does the mucous membrane, and the wind-up is that the muscular tissue or traumatic surface is entirely at the rear of the mucous membrane which covers and protects the stump of the uvula, so the annoyance incident to swallowing is thereby diminished. Eventually it heals at the size he desires it to be.

Dr. Moreau R. Brown said that it has been his custom to remove the uvula in a similar manner to that described by the essayist, and the operaton has satisfied both himself and the patients. In removing the uvula it is his aim to make the incision so that the cut surfaces will be to the back part of the stump. This is done with any ordinary curved-on-the-flat scissors. In some cases where the mucosa is lax it can be caught by the forceps and slipped up over the underlying muscular tissue. When both mucosa and muscular tissue can be divided, the mucosa will hang down and completely cover the muscular tissue. Occasionally he has reversed the procedure by catching the mucosa high up on the uvula and drawing it upward, then cutting through the tissues below the forceps.

Regarding adrenalin, he has been using it with considerable satisfaction. The preparations of adrenal gland have passed beyond the experimental stage and we know their value and efficacy and have for some time been anxious for the introduction of some such preparation as adrenalin.

Dr. E. Fletcher Ingals thought removal of the uvula by the method recommended by the essayist would be satisfactory, but the double cut seems unnecessary. He could not recall more than one case in the last twenty-five years where he would have gained anything by making a double cut. In that case the uvula was about as thick as one's little finger, and the patient had a very sore stump for several days. The best method, in his experience, is to remove the uvula with the ordinary polypus snare. The uvula is caught exactly at the point where we want to cut it, and with a single closing of the fingers it is removed. If thought desirable to cut the muscular tissue, higher up, this could be done in cases where the mucous membrane is loose, by simply catching the uvula lightly with the wire first, then lifting up the mucous membrane an eighth of an inch and then closing the wire loop.

In most cases we will note that when we have cut it off, the raw end of the stump is not more than half the diameter of the whole uvula. He has never seen any inconvenience from operating in this way, except possibly in the one case to which he referred. The hemorrhage from this method of operating is much less than when scissors are employed, and the tissues may be cut with much more accuracy than when they have been drawn down by forceps.

Dr. G. P. Head said he had found, in operating on the uvula, that unless he wished to do as Dr. Pynchon recommended, that is, put the uvula on such a stretch as to amputate a large portion of the mucous membrane, with the ordinary curved scissors it was difficult to engage it in the first snip. In looking around for an instrument that was not a uvulotome, he found a useful one in Hanks's trachelorrhaphy scissors, which is notched at the end, and curved a little on the edge as well as on the flap. With it he gets the advantage spoken of by Dr. Ingals in the use of the snare, in that when he engages the uvula he does not pull it down to any extent, but simply holds it lightly with forceps, the notch at the extremities of the blades holding the uvula firmly while he makes the snip. In this way we can get what portion we want without putting the mucous membrane on a stretch. These scissors are unexcelled as an instrument for removing tonsils which are too small for the tonsillotome.

Dr. J. Homer Coulter asked whether the only object in giving the ether is to obtain additional time?

Dr. Casselberry, closing the discussion, said "yes, nitrous oxid is supplemented by ether to gain additional time for operating." In elucidating his method of uvulotomy, he said that his instrument is a pair of long-handled, slightly curved scissors, which he had made for the purpose. One blade has a cross-bar at the end. This curve facilitates the upward and backward slant, and the cross-bar keeps the uvula from slipping out. He has not had serious hemorrhage following uvulotomy, but in one or two cases a slight application of the cautery point seemed best to stop the bleeding without annoying delay. Should an active hemorrhage occur inside the flap of mucous membrane, it might be difficult to control it by mere cauterization, and this might be some objection to the method. Persistent bleeding, however, from uvulotomy, by his method is exceedingly rare, and if it should occur it could be controlled by compression. or one could snip off some of the mucous membane that had been folded around the stump. With reference to a second cut, he has not found it objectionable, if made very quickly after the first one; the patient does not appreciate that it is more than a continuation of the one cut, but after having made the first one, he often takes a moment to apply cocain afresh to the raw surface, and then makes the second. In regard to snaring the thick type of uvula, to get the snare on the uvula in exactly the right place, especially with patients disposed to gag easily, would require a high degree of expertness.

With respect to the reaction following the use of adrenalin and the alleged greater liability to hemorrhage than would otherwise result from operations done without its influence, in nasal operations for the removal of excrescences, correction of deviations of the septum, etc., it is his custom to pack antiseptically, immediately after the operation, hence it does not matter whether there is greater liability to bleed or not. In pharyngeal operations he has not used adrenalin nor aqueous extract of adrenal gland. on account of the tendency to greater hemorrhage after its use. As a rule, we can get along just as well without it in pharyngeal operations.

Dr. Edwin Pynchon called the attention of the Society to the use of a strong solution of nitrate of silver—25 per cent.—to prevent hemorrhage after uvulotomy. It has been his custom to apply it in this strength, and he has always found it very satisfactory.

Notes on Adrenalin and Adrenalin Chlorid.

Dr. E. Fletcher Ingals read a paper on this subject. It will be printed in The Journal.

Officers.

The following officers were elected for the present year: President, Dr. Wm. E. Casselberry; secretary and treasurer, Dr. John Edwin Rhodes; council, Drs. T. Melville Hardie, Dr. J. Holinger, and O. J. Stein.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Gonorrhea.

The varieties of urethritis may be classified as follows: Acute and chronic. 1. Simple: *a*, toxic; *b*, traumatic. 2. Specific, due to the gonococcus. Attention will be called to the treatment of the specific form only. It consists of both local and internal medication. Lydston advises, as abortive treatment, removal, as far as possible, of the virulent germs which have been deposited on the surface of the mucous membrane; a prolonged and thorough irrigation of the anterior urethra with a solution of potassium permanganate, 1 to 10,000 to 1 to 5000. During this treatment he advises internal medication by the administration of alkalies. As to the general management of the disease. he emphasizes the importance of rest—physical and sexual—in bed. Next in importance to rest is attention to the diet, in order to limit the elimination of irritative products by the urine. A vegetable diet or a bread and milk diet is preferable, avoiding asparagus and tomatoes.

LOCAL TREATMENT.

A solution of hydrargyri bichloridum, 1 to 30,000 to 1 to 15,000, in combination with a small amount of glycerin, is recommended.

AS AN ANODYNE INJECTION.

℞.	Atropinæ sulphatis	gr. i		06
	Bismuthi subnit	ʒiii	12	
	Mucil. acaciæ			
	Aq. destil., āā	℥ii	64	

M. Sig.: Shake well and inject three times daily; or

℞.	Tinct. opii deod	ʒiss	6	
	Bismuthi subnit	ʒiii	12	
	Mucil. acaciæ			
	Aq. destil., āā	℥ii	64	

M. Sig.: Shake well and inject three times daily.

AS AN ASTRINGENT INJECTION.

℞.	Zinci Sulphatis	gr. x		66
	Morph. sulph	gr. viii		50
	Glycerini	ʒi	4	
	Aquæ rosæ	℥iii	96	

M. Sig.: As an injection; *or*

℞.	Zinci sulpho-carbol	gr. xii		72
	Glycerini	ʒi	4	
	Aquæ rosæ	℥iii	96	

M. Sig.: As an injection.

A VEGETABLE ASTRINGENT.

℞.	Hydrastis muriatis	gr. viii		5
	Ext. hamamelidis flu	ʒi	4	
	Glycerini	℥i	32	
	Aq. destil q. s. ad	℥iv	128	

M. Sig.: As an injection.

The following may be of service as an astringent:

℞.	Bismuthi subgallati	ʒiss	6	
	Zinci sulphatis	gr. xv	1	
	Aquæ calcis	℥vi	192	

M. Sig.: Use as an injection three times a day, after urinating.

The following is the general outline of treatment used by Dr. Henry J. Scherck. as given in the *Ther. Gazette:* The urethra is first carefully washed with lukewarm water, followed by an injection of the following:

℞.	Protargol	gr. xx	1	33
	Aq. destil. q. s. ad	℥iv	128	

M. Sig.: As an injection twice or three times a day.

The solution, whatever it may be, should be introduced gently into the canal with a three-ounce, hard-rubber syringe. The solution should be allowed to remain for five minutes, the patient closing the meatus by pressure of the finger. Instead of protargol, Dr. Scherck sometimes employs mercurol in 2 per cent. solution, or Credé's silver in 1 per cent. solution. After the solution has been allowed to escape, a two-gallon irrigator filled with a 1 to 1000 solution of potassium permanganate, at a temperature of 120 F., is irrigated into the canal, the irrigation being raised to a sufficient height to cause the pressure to distend the canal without overcoming the sphincter muscle. The entire amount of the permanganate solution is used in this way. The strength of this solution should be increased from day to day until about 1 in 500 is attained.

As to internal medication, the main object is: 1, to keep the urine from causing irritation, and this may be accomplished by alkaline treatment; 2, to render the urine aseptic and germicidal, by the use of the following combination:

℞.	Cystogen	gr. v		33
	Ol. santoli	m. x		

M. Ft. cap. No. i. Sig.: One such capsule every four hours.

Cystogen is said to be of similar composition to urotropin. which is a compound produced by the action of formaldehyde on ammonia.

Careful attention to diet is necessary, with care to avoid such articles as would tend to congest the genito-urinary tract or increase the acidity of the urine, or in any way increase the irritation to the mucous membranes. He advises, in the main, the same line of treatment in chronic as in the acute cases.

SILVER SALTS IN ACUTE GONORRHEA.

Youmans (*Med. Standard)* states that the urethra should be irrigated twice daily with a 1 to 4000 solution of potassium permanganate. If streptococci are present in the discharge, a 1 to 20,000 bichlorid solution should be added to this. The temperature of the solution used for injection should be 110 F., gradually increased to 120. If the disease is in the posterior urethra the fluid is allowed to flow into the bladder by hydrostatic pressure, after washing out the anterior portion of the urethra. After each irrigation, the following injections are used:

℞.	Argonin	ʒii	8	
	Aq. destil. q. s. ad	℥iv	128	

M. Sig.: As an injection; or

℞.	Protargol	gr. xl	2	6
	Aq. destil. q. s. ad	℥iv	128	

M. Sig.: Use as an injection after each irrigation, and retain ten minutes.

W. W. Wilson *(Buffalo Med. Jour.)* states that argonin is by far the best. He uses it as follows:

℞.	Argonin	gr. xl	2	66
	Aq. destil. q. s. ad	℥iv	128	

M. Sig.: Use as an injection four times a day. The solution should be retained ten minutes each time.

Argonin is a compound of silver—4 per cent. It has the disadvantage of not being soluble in cold water. It should be kept in dark bottles, as it is easily decomposed by light.

ARGENTAMIN IN GONORRHEA.

This preparation has been employed with good success in gonorrhea. It is a solution of silver phosphate in aqueous solution of ethylendiamin. It is an antiseptic which does not precipitate albumin, is alkaline in reaction, and can be used in the strength of 1 to 3000. For conjunctival application it can be used in 5 per cent. strength.

IN HIGH-GRADE INFLAMMATIONS.

The following is sometimes recommended to subdue the inflammation:

℞.	Morphinæ sulphatis	gr. ii		12
	Liquoris plumbi subacetat. q. s. ad	℥vi	192	

M. Sig.: Inject four or five times daily. A warm solution is better.

Duguaire (*Sem. Med.)* very highly recommends the following as an injection:

℞.	Ol. gaultheriæ	gr. xv	1	
	Bismuthi subnit	ʒv	20	
	Petrolati (liquid)	℥iii	96	

M. Sig.: Use as an injection three times daily, with a syringe, the nozzle of which has a soft and extra wide canula.

POTASSIUM PERMANGANATE AS AN INJECTION.

℞.	Potassii permanganatis	gr. 1/4 to 1/2		015-03
	Sodii chloridi	gr. xv	1	
	Aq. destil	℥vi	192	

M. Sig.: Inject four or five times daily.

In some cases where there is chronic inflammation of the bulbous urethra, Lydston advises the following, introduced through the endoscopic tube:

℞.	Iodoformi	ʒiv	16	
	Tinct. benzoin comp.			
	Balsami peruvianæ, āā	℥i	32	

'M. Sig.: Apply through the endoscopic tube.

METHYLENE BLUE IN GONORRHEA.

Dr. J. A. Oneill *(Med Record)* states that he can quickly effect a cure by the administration of methylene blue as follows:

℞.	Methylene blue	gr. i		06
	Olei myristicæ	m. i		*06*
	Olei santoli	m. ii		12

M. Ft. capsula No. i. Sig.: One such capsule four times a day.

By giving four grains of methylene blue daily, he states, there is always enough of it in the urine to kill all the germs with which it comes in contact. It should not be used continuously longer than ten days at a time.

ICHTHYOL IN THE GONORRHEA OF WOMEN.

Dr. J. G. Clark *(Am. Jour. of the Med. Sci.)* maintains that absolute rest in the acute stages is of the greatest importance. As to treatment, he regards ichthyol as the most valuable preparation, because it is non-irritating and is very effective in alleviating pain and reducing the inflammation, and its use is not followed by the disagreeable results sometimes noted after the use of more irritant remedies. He uses it in solutions of 1 to 5 per cent. strength, injected into the urethra.

Complications of Gonorrhea.

EPIDIDYMITIS AND ORCHITIS.

Rest in bed is the important treatment when there is acute inflammation of the testis. Stimulation to the urethra by means of injections should be stopped. Local applications of poultices of linseed or tobacco are strongly recommended by many specialists. The administration of saline cathartics and alkaline diuretics is necessary. The use of opiates to control the pain is sometimes imperative. Where it is inconvenient to apply poultices, Lydston recommends the following:

℞.	Menthol	gr. xl	2	66
	Ext. belladonnæ	gr. xx	1	33
	Ext. *aconiti*	gr. x		66
	Lanolini q. s. ad	℥ii	64	

M. Sig.: Spread on lint and continuously apply to the testicle; *or*

℞	Methyl salicylatis	ʒiii	12	
	Ext. belladonnæ	ʒi	4	
	Adifis	℥i	32	

M. Sig.: Apply locally to the testicle.

GONORRHEAL OPHTHALMIA.

It is not unusual for the general practitioner to make a mistake in his diagnosis of gonorrheal ophthalmia. He may attribute the purulent discharge to other causes than gonorrheal infection; on the other hand he is very liable to mistake a mucus for purulent discharge, and thus, by use of the silver salts, create a diseased condition in an otherwise healthy organ. Especially may this be the case following the use of silver nitrate solutions. In true gonorrheal infection of the eye the following seems to be the favorite of most oculists, because it is non-irritating:

℞.	Protargol	gr. xx-xxv	1	33-1.66
	Aq. destil. q. s. ad	℥i	32	

M. Sig.: Drop into the eye twice daily.

Protargol is a proteid compound containing 8.3 per cent. silver. It is freely soluble in cold water and is stable.

GONORRHEAL ARTHRITIS.

Dr. C. A. Porter *(Boston Med. and Surg. Jour.)* says that drug treatment does not yield the proper results. He has obtained his best results from the continuous use of ice-bags, or dry heat, preferably at a temperature of 250 to 400 F. The actual cautery is the best counterirritant and frequently relieves the pain. After two or three weeks, when the acute process has subsided, resort to massage and movement of the joint should be had.

Medicolegal.

Issuance of but One Temporary Certificate Authorized.—A statutory provision that one member of a board of medical examiners may give a temporary certificate entitling the holder to practice medicine until the next meeting of the board, the Supreme Court of Texas holds, in the case of Peterson vs. Seagraves, will confer on an individual member of the board authority to issue but one temporary certificate to a person. An express prohibition of the issuance of more than one temporary certificate or license to the same person it deems unnecessary. Nor does it consider that the fact that the laws regulating the practice of dentistry and pharmacy in the state may contain provisions expressly forbidding the issuance of more than one temporary certificate can be taken to determine the construction of a practice act existing before those laws were passed.

Change of Residence Requires New County License.—The Appellate Court of Indiana says, in the case of Mayfield vs. Nale, that the statute of that state is plain that, if a physician changes his residence from one county to another, he must obtain a new license in the county where he proposes to reside. This is a condition precedent to his right to practice in that county, and it is made unlawful for him to practice in such county without such license. In consequence, he can not maintain an action for medical services rendered in a county, after moving thereto, without first having procured the requisite license. That he may subsequently comply with the law will not enable him to recover for services rendered in such county prior to obtaining a license therein. Whether the law that makes possible such a defense where competent professional services have actually been rendered is a wise one, it is held, is not for the courts to say.

Conversations in Presence of Third Parties.—The Appellate Court of Indiana holds, in the case of the Masons' Union Life Insurance Association vs. Brockman, that as to what a witness who made his headquarters at a physician's office for a couple of weeks heard the physician and a patient say was not privileged, as to such witness, but he could testify thereto. For example, if the patient was being treated for the drink habit, and the witness knew it, either from his own knowledge or from what he heard the patient and his physician say when they were in each other's presence, it was competent for him to so testify. As to what weight the evidence might have with the jury was not a question with the court. It is the rule, the court adds, that, if statements are made in the presence and hearing of a person affecting his rights, and under such circumstances as call for a reply, what he said, or if he failed to say anything, may be proven as in the nature of an admission.

Physician May Testify as to Wounds on Shaved Head.—In the homicide case of the State of Missouri vs. Tettaton, where the evidence of the physicians disclosed the fact that it would have been impossible for the defendant to have been cut in the head as he was by any other person than himself, it was insisted that the court should not have permitted witnesses to testify with respect to the condition of the wounds on his head, as they existed after his head was shaved. The contention was that the act was involuntary, and was compelling the defendant to give evidence against himself. But this contention, the Supreme Court of Missouri, Division No. 2, says was not borne out by the record, which showed that it was not only voluntary on the part of the defendant, but that it was necessary in order to enable the physicians to treat the wounds. Yet, even if the shaving of his head had been against his will and consent, there can be no question, it holds, but that physicians could have examined his head, and then testified to the condition of the wounds, their character, and whether or not done with a sharp or blunt instrument.

Proper Evidence of Injury of Private Parts.—The Supreme Court of Wisconsin says, in the personal injury case of Guhl vs. Whitcomb, that it can not pass silently the reception in evidence of photographs showing rear views of the plaintiff's person, nude from below the shoulders to mid-thigh. Such photographic exposure of the body of a 20-year-old girl in a court room full of men is even more grossly improper and shocking, it goes on to say, than the conduct disclosed in Brown vs. Swineford, of which this court thus expressed its condemnation in the scathing words of Chief Justice Ryan: "No such indecency is ever necessary, or should be tolerated, in court. If the condition of any private part of the body of any party, male or female, is material on any trial, it should be privately examined by experts out of court, and expert testimony be given of it. Such an exposure as was made in this case, if made without leave of the court, might well be punished as a contempt. Made with the sanction of the court, it is none the less improper and indecent, well calculated to disgrace the administration of justice, and to bring it into ridicule, if not into contempt. It is hoped that this court may never have another occasion for such censure." To those words, the court now declares, it can not and need not add, save to reiterate the sentiments they express, and to invoke for them the careful attention of those, whether of court or bar, who may be tempted to repeat such defilement in a court of justice.

Opinion of Physician Called After Making of Will.—A physician visited, at about noon, or after it, a man who, there was evidence tending to show, had had a slight stroke of paralysis the night before, and had made a will between 10 and 11 o'clock in the forenoon. He did not get an intelligent word out of the man, although he considered that he had partial intelligence. Under these circumstances, and the physician having got the impression from the inquiries he made that the man had been in the same condition from early morning, the Supreme Court of Michigan holds, Lange vs. Wiegand, that it was clearly competent for the doctor to express an opinion as to the mental capacity of the man at the time he saw him. It adds that it did not conclusively appear that the condition of the man had changed so materially after the time of making the will that the opinion of the doctor as to his mental capacity at the time of his visit was wholly without force. On the other hand, it holds that it was error to charge the jury in this case that if the statements made by three witnesses named were true, they showed a mental capacity in the man to make a will, over against which "you put the statements of what the doctors say, and what they say about his not having awakened sufficiently to speak, and so forth." It says, in explanation of its holding that this was error that the doctor did not see the man until the afternoon. The will was made between 10 and 11 o'clock in the morning of the same day. He was failing rapidly from a stroke of paralysis. His condition, according to the testimony of several witnesses for the proponent of the will, was not alarming while the will was being signed. He lay propped up in bed, and, though his right arm and hand were considerably affected, they testified he could talk, and that he bore no evidences at that time of mental aberration. In the afternoon, however, his condition very much changed. Under these circumstances, what his condition was at that time, the court holds, could not be weighed against the testimony of wtinesses, who stood unimpeached, as to the condition when the will was made.

On Criminal Abortion and Dying Declarations.—The Court of Appeals of Maryland says, in Worthington vs. State, that, whatever may have been the severity of the earlier common law, the proposition is too broadly stated that death resulting from criminal abortion has always been murder at common law. The crime of abortion is a misdemeanor, only, at common law; and the Maryland statute, while broadening the scope of the common law, and increasing the punishment, still leaves the crime a misdemeanor. Thus, it has been said that "causing the mother's death in attempting an abortion is only manslaughter at common law, if the attempt is not made in a way that endangers the mother's life. In the latter case it is murder." It is only in jurisdictions where abortion is raised by statute to the grade of felony that causing the death of the mother is necessarily murder. It is common knowledge, the court goes on to say, that death is not now the usual, nor, indeed, the always probable, consequence of an abortion. The death of the mother, doubtless, more frequently resulted in the days of rude surgery, when the character and properties of powerful drugs were but little known, and the control over their application more limited. But, in these days of advanced surgery and marvelous medical science and skill, operations are performed and powerful drugs administered by skillful and careful men without danger to the life of the patient. Indeed, it is this comparative immunity from danger to the woman which has doubtless led to the great increase of the crime, to the establishment of a class of educated professional abortionists, and to the enactment of the severe statutes almost everywhere found to prevent and punish this offense. The woman takes her life in her hands when she submits to an abortion, be she wife or maid, but her death is no necessary element in the procuring of an abortion; and the application of the harsh rule that the death of a woman, resulting from a criminal abortion upon her, is murder would have no effect in the repression of that abhorrent crime, which can only be efficiently dealt with by severity in the enactment and administration of the law punishing the attempt upon the life of the unborn child. The corpus delicti of the offense of abortion is the destruction of the unborn infant. The crime is complete, with the death of the woman or without it. Her death is not a constituent element of the offense. But in this case the indictment was not for abortion. It was an indictment which charged manslaughter, and the facts of the abortion were simply alleged there as going to show what caused the death, just as if it had been alleged that the means of death were by shooting the woman with a pistol. Under such an indictment, dying declarations, the court holds, are receivable, although in a prosecution for abortion it would seem they would not be where the death of the woman is no part of the facts which go to constitute the crime. It is certain, it says, that dying declarations can only be received where the death of the deceased is the subject of the charge, and the circumstances of the death the subject of the declaration. It is essential that actual danger of death must exist, that there is full belief that it is actually impending, and that death ensues. Any expressed or clearly visible hope of recovery will render the declaration inadmissible. But the declarant's own belief at the time is the criterion of admissibility. It is not material that others, even the physician, thought differently and had hopes of recovery.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Philadelphia Medical Journal, March 16.

1 Strangulated and Gangrenous Hernia. Kelotomy and Laparotomy in Strangulation, External and Internal; Artificial Anus-Enterostomy, Primary or Secondary Resection—Enterectomy, and End-to-End or Lateral Jointing in Gangrenous Hernia. (To be continued.) Thomas H. Manley.
2 *Percentage and Laboratory Feeding. J. P. Crozer-Griffith.
3 *A Contribution to the Technic of the Widal Test. A. Robin.
4 Rupture of the Rectum and Hernia of the Intestines in an Insane Man. A. R. Moulton.
5 Removal of the Right Upper Cervical Sympathetic Ganglion for the Relief of Glaucoma Simplex. D. H. Coover.
6 A Synoptical Report of 1141 Cases of Indigent Visitors Treated at Hot Springs, Ark. Howard P. Collings.

Medical News (N. Y.), March 16.

7 *Recent Experiences with Erythromelalgia. Henry L. Elsner.
8 The Treatment of the Heart in Typhoid Fever and Other Infectious Diseases. Albert Abrams.
9 *A Report of Three Cases of Thoracic Aneurysm Treated by Subcutaneous Injections of Gelatin. Lewis A. Conner.
10 *Observations upon Amoebae Coli and Their Staining Reactions. Charles F. Craig.
11 *A Preliminary Note on the Relation of the Form of Tubercle Bacillus to the Clinical Aspects of Pulmonary Tuberculosis. Henry Sewall.
12 Rhinoscleroma. H. Jarecky.
13 Subglottic Growths; Report of Cases with Exhibition of Improved Instruments. Robert C. Myles.

New York Medical Journal, March 16.

14 Congenital Dislocation of the Shoulder, with Report of Two Cases of Dislocation Posteriorly. Daniel W. Marston.
15 *The Representation of Biliary Calculi by the Roentgen Rays. Carl Beck.
16 Substitute Feeding of Infants upon Milk Modified According to Prescription in Laboratories. W. P. Northrup.
17 *The Specific Treatment of Acute Dysentery. (Concluded.) William J. Cruikshank.

18 The Pathology of Intra-uterine Death. (Concluded.) Neil MacPhatter.
19 Angeioma Cysticum of the Nose. Henry L. Wagner.
20 A Simple Apparatus for Modifying Cow's Milk. Charles Herrman.

Medical Record (N. Y.), March 16.

21 *The Treatment of Gonorrhea with Frequent Irrigations of Hot Deci-normal Salt Solution. Charles E. Woodruff.
22 A Whistle in the Esophagus. A. E. Isaacs.
23 *The Treatment of Colitis by Valvular Colostomy and Irrigation. P. R. Bolton.
24 The Ovary: Its Relation to Normal Functions and to Pathological States. Samuel W. Bandler.
25 The Use of Suprarenal Capsule in Hemoptysis. Wm. B. Kenworthey.

Boston Medical and Surgical Journal, March 14.

26 The Story of the Boston Society for Medical Improvement. J. G. Mumford.
27 Notes from the Neurological Department of the Massachusetts General Hospital. Sudden (Apoplectiform) Bulbar Paralysis; Hemiplegia: Astereognosis. W. E. Paul.
28 *Intestinal Anastomosis. Charles G. Cumston.
29 A Case of Cesarean Section. Herbert J. Keenan.

Cincinnati Lancet-Clinic, March 16.

30 The Medical Man's Position in Education. Brose S. Horner.
31 Rev. John Wesley as a Physician. H. V. Sweringen.

Atlanta Journal-Record of Medicine, March.

32 The Relation of the Profession to the General Public. R. R. Kime.
33 Management of Labor with Reference to Some Complications. W. Monroe Smith.
34 Treatment of Catarrhal Deafness by Electrolysis of the Eustachian Tube. Dunbar Roy.

Northwestern Lancet (Minneapolis, Minn.), March 1.

35 Lobar Pneumonia—Croupous Pneumonia—Pneumococcus Infection (Musser). Christopher Graham.
36 Primary Laryngeal Tuberculosis. W. N. Porteous.
37 Ideas of Disease and Medicine Among the Chinese. I. M. J. Hotvedt.

Annals of Surgery (Philadelphia), March.

38 *On Non-Obstructive, Post-Operative Anuria. F. Tilden Brown.
39 *Diagnosis of Stone in the Kidney by the X-ray, and its Treatment. Arthur D. Bevan.
40 *Hernia of the Fallopian Tube Without Hernia of the Ovary. Paul F. Morf.
41 Contributions to the Surgery of Malignant Disease of the Prostate Gland and of the Tonsils. Nathan Jacobson.
42 *Resection of the Pendulous, Fat Abdominal Wall in Cases of Extreme Obesity. Lindsay Peters.
43 *Eversion of the Tunica Vaginalis as a Remedy for Hydrocele. Dudley Tait.
44 Report of a Case of Recovery after Abdominal Section for Multiple Gunshot Wounds of the Abdomen. Frank Martin.
45 Periosteal Osteosarcoma of Upper Extremity of Femur; Ligation of Common Iliac Artery, with Amputation at Hip-Joint and Removal of Portion of Pelvis, Etc.: Recovery, with Freedom from Recurrence at End of Nearly Sixteen Months. Leonard Freeman.

Clinical Review (Chicago), February.

46 Divulsion, Counter-Pressure and Diversion in the Treatment of Certain Forms of Dysmenorrhea. O. B. Will.
47 Clinical Lecture on the Treatment of Septic Infections of the Extremities. A. J. Ochsner.
48 Causation and Treatment of Constipation in Children. John H. Byrne.
49 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

American Journal of Insanity (Baltimore, Md.), January.

50 *Hallucinations: Their Origin, Varieties, Occurrence and Differentiation. W. Alfred McCorn.
51 Clinical Cases. VII. The Pathology of Chronic Alcoholism. Henry J. Berkley.
52 Results of Five Years' Experience with Co-operation between State Hospitals for the Insane: May it be Profitably Extended to Other Charitable Institutions? Peter M. Wise.
53 Kraepelin's Clinical Picture of Katatonia. Translated by A. E. Brownrigg.
54 John S. Butler: The Man and His Hospital Methods. Charles W. Page.
55 *On the Importance of Pathological and Bacteriological Laboratories in Connection with Hospitals for the Insane. Lewellys F. Barker.
56 *A Contribution to the Pathology of the So-called Functional Neuroses. Theo. Klingmann.

Dominion Medical Monthly (Toronto), February.

57 Autointoxication and Excretion in Relation to Disease. H. B. Anderson.
58 Cases in Diseases of the Skin. Graham Chambers.
59 Report of a Case of Simple Fracture of the Ulna Where Incision Was Necessary for Reduction of Deformity. A. Primrose.

American Gynecological and Obstetrical Journal (N. Y.), February.

60 *Can Interstitial Keratitis be Prevented in the Offspring of Syphilitics. Peter A. Callan.
61 Two Interesting Cases. (Perineal Sinuses and Pelvic Abscess.) Charles P. Noble.
62 A Case of Pseudo-Ileus, Following Instrumental Delivery and Adherent Placenta. Joseph M. Rector.
63 The Relation of Appendicitis to Diseases of the Uterine Appendages. Albert L. Beahan.
64 Cholemia and Hemorrhage. D. Todd Gilliam.
65 Seventeen Cases of Congenital Nocturnal Incontinence of Urine Cured by Operation. George H. Noble.
66 The Cure of Complete Prolapsus Uteri by Plastic Surgery. John D. Emmet.

Medical Review of Reviews (N. Y.), February 25.

67 On the Early Recognition of Typhoid Fever. James K. Crook.

Ophthalmic Record (Chicago), February.

68 A Most Simple and Efficient Eye Dressing and a Bandage that Will Stay. M. F. Weymann.
69 Extraction of Iron from Interior of the Eye by the Haab Electromagnet. N. J. Weill.
70 A New Skiascopic Mirror. William E. Baxter.
71 Case of Hemorrhage from the Conjunctiva in an Infant. Howard F. Hansell.
72 *Report of a Different Operative Method in the Treatment of Trachoma, with Notes upon the Construction of an Instrument Devised for the Purpose. P. Chalmers Jameson.
73 Ophthalmic Notes. Melville Black.
74 "Ossified or Calcareous Eye with Specimen." Thomas McDavitt.
75 Listing's Plane—A Reply to Dr. Harold Wilson's Criticism. G. C. Savage.
76 *A Word Concerning the Etiologic Relationship of Epidemic Influenza to Chronic Glaucoma. G. E. de Schweinitz.
77 *Blindness and Death from Drinking Essence of Jamaica Ginger, Peppermint, etc., Due to Methyl Alcohol. Herbert Harlan.

University Medical Magazine (Philadelphia), February.

78 Dysentery (in the Tropics): its Symptomatology, Complications and Treatment. B. L. Wright.
79 *The Association of Chronic Jaundice with Gastroptosis. Report of a Case. J. Dutton Steele.
80 A Clinical and Histologic Study of a Case of Melanosarcoma of the Choroid. Charles A. Oliver.
81 *A Note on the Disinfectant and Deodorant Action of Ammonium Persulphate. Mazyck P. Ravenel and Samuel H. Gilliland.

New York State Journal of Medicine (N. Y.), March.

82 Removal of Pin Embedded in the Tissues Twelve Years. Charles T. Bell.
83 *The Etiology and General Prophylaxis of Tuberculosis. Victor C. Vaughan.
84 Some Unusual Cases of Infectious Disease. Delancey Rochester.
85 The Long Period of Incubation in Animals Affected by Rabies. G. W. Goler.
86 *Treatment of the Patient During the Weeks Previous to Expected Confinement. Edward P. Davis.
87 Biographical Sketch of Dr. John P. Sharer. Chas. H. Glidden.

St. Paul Medical Journal, March.

88 *Cases of Gall-Bladder Surgery. John C. Munro.
89 Is There a Decadence of Our Ethical Standard? J. G. Mumford.
90 *A Consideration of the Different Operative Procedures in the Treatment of Retro-Displacements of the Uterus. O. Beverly Campbell.
91 *Operative Measures for the Radical Cure of Inguinal Hernia. Gustav A. Renz.
92 Preparation and After-care of Surgical Cases. John T. Rogers.
93 Heat in Surgery. C. H. Mayo.
94 Recurrent Acute Catarrhal Otitis. B. M. Behrens.
95 Synchronous Dislocation of the Humeri (sub-glenoid). Howard Lankester.

Colorado Medical Journal (Denver), February.

96 The Domain of Preventive Medicine. Charles W. Hertzman.
97 Some Observations on Medical Legislation. William Duffield.
98 Reminiscences of a Pioneer. O. B. Whitford.

The Laryngoscope (St. Louis, Mo.), February.

99 *The Pneumatic Sinuses in the Sphenoidal Wings. Beaman Douglass.
100 *The Use of the Tuning Fork as a Test for Disease of the Maxillary Antrum. D. A. Kuyk.
101 Extradural Abscess following Acute Suppurative Tympano-Mastoiditis with Report of Two Cases. James Francis McCaw.
102 Necrosis of Turbinated Bones and Adjacent Structures. J. W. Bird.
103 Some Notes on Routine Office Work. E. C. Ellett.

Toledo Medical and Surgical Reporter, March.

104 *Melanosarcoma of the Choroid with Report of Three Cases. Francis W. Alter.
105 Actinomycosis, with Report of a Case. E. B. Barlow.
106 Treatment of Acute Articular Rheumatism. J. W. P. Smithwick.

Mississippi Medical Record (Vicksburg), March.

107 A Résumé of Recent Advancements in Rectal Surgery. John L. Jelks.
108 Laryngo-Tracheotomy for Foreign Body. W. H. Barr.
109 A Case of Fracture of the Neck of the Femur. John Brownrigg.
110 Clinical Lecture. (Exploratory Laparotomy.) W. W. Keen.

American Journal of Surgery and Gynecology (St. Louis, Mo.), February.

111 Diabetic Gangrene—Amputation—Recovery. L. Brannon.
112 Preventive Operation in Acute Inflammation of the Appendix. Mansell Moullin.
113 Clinical Cases in Surgery Illustrated by Radiographs and Photographs of a Compound Pott's Fracture Complicated with Osteomyelitis and Necrosis; A Compound Fracture of Clavicle and Tubercular Cervical Glands; Mammary Adenoma and Appendectomy. Harlan Trask.
114 Tuberculosis of the Spine and its Treatment. A. M. Phelps.
115 Division of Fees. Robert T. Morris.
116 A Peculiar Accident from the Use of Rubber Gloves. Emory Lanphear.

Kansas City Medical Index-Lancet, March.

117 *Climatic Conditions in Western Texas, and Their Influence upon Pulmonary Diseases. Junius A. Rawlings.
118 Three Cases of Typhoid Fever Complicated with Malarial Fever. N. A. Drake.
119 Meningitis. John Punton.
120 The Diagnosis of Pott's Disease. D. H. Gibney.
121 A Case of Chronic Rheumatism. L. B. Smith.

Medical Standard (Chicago), March.

122 Appendicitis and its Treatment. A. J. Ochsner.
123 The Constitutional Treatment of Syphilis. W. S. Gottheil.
124 Management of the Victims of Drug Habits. David Paulson.
125 How to Teach Anatomy. J. F. Burkholder.
126 Acute Respiratory Diseases. Wm. F. Waugh.
127 Some Surgical Cases (Lipoma, Keloid, etc.). N. Senn.
128 Typhoid Fever; Its Complications and Sequelæ. J. T. Moore.
129 Neurasthenia Treated by Electricity. Francis B. Bishop.

Medical Council (Philadelphia), March.

130 Disorders of the Sexual Function in Man. A. H. P. Leuf.
131 Acute Purpura Hemorrhagica, with Autopsy. F. W. Gavin.
132 Water Analysis. J. L. Wolfe.
133 Lithemic Orchi-Epididymitis. W. H. Lyne.
134 The Female Bladder. A. L. Russell.
135 Tonsillitis and its Treatment. Chas. F. Hope.
136 Puerperal Infection and its Treatment. I. B. Washburn.
137 Asepsis in the Lying-in Room. Joseph B. Cooke.
138 *Suprarenal Extract in Diseases of the Eye. W. H. Bates.
139 The Injection Method for the Relief and Cure of Hernia. C. Fletcher Souder.

St. Louis Medical and Surgical Journal, March.

140 La Grippe. Wm. Hooker Vail.
141 The Necessity and Value of a Good Eliminant in Post-grippal Conditions. A. H. Ohmann-Dumesnil.
142 A Practical Prescription Applicable in Many Affections of the Air-Passages. Ed. Gros.
143 A Case of Chronic Rheumatism. L. B. Smith.
144 The Treatment of Enteritis with Xeroform. Giovanni Petrucci.
145 Some Anomalous Cases of Typhoid Fever. Augustus A. Eshner.

Memphis Medical Monthly, March.

146 Mosquitoes in Malaria—A Further Consideration. Wm. Britt Burns.
147 *The Etiology and Treatment of Hemoglobinuric Fever. J. B. McElroy.
148 *Clinical Notes on a Few Cases of Malarial Hemoglobinuria. J. W. Laws.

Georgia Journal of Medicine and Surgery (Savannah), February.

149 A Study of Artificial Infant Feeding. W. E. Fitch.
150 Hysteria, its Nature and Etiology. Henry Brooks, Jr.
151 Rotary Lateral Curvature of the Spine. Daniel W. Marston.
152 *The Diagnosis of Ectopic Pregnancy before Rupture, Based on Eleven Cases. J. F. Baldwin.
153 Extensive Skull Fracture with Recovery. A. J. Richter.

AMERICAN.

2. **Laboratory Feeding.**—Some of the questions in regard to infant feeding are noticed by Griffith, who insists on the value of milk laboratories as they now exist in large cities. One of the secrets of successful feeding is, he thinks, to have the infant begin with a low percentage. We should not take mother's milk as the standard for artificial feeding. The proteids of cow's milk differ from those of the human species, and this mistake is sometimes made. In the first two weeks of life the child should be treated with .5 per cent. proteid, and even later in the first year it is wise to begin with low proteid. We should begin with a small amount of fat, 2 per cent. instead of the normal 4 per cent. of woman's milk and a little less than the normal percentage of sugar, 6 per cent. instead of 7, for example. For a very young baby, therefore, who has had signs of indigestion without serious disease, the formula of 2 per cent. fats, 5 per cent. sugar, .5 per cent proteids is best. This will not answer long, but the method of increase will depend upon the conditions. It is important to weigh the child weekly or semiweekly. If the increase in weight does not progress satisfactorily, look out for unfavorable symptoms and alter the formula. In any cases where the percentage feeding does not seem to agree, we should be sure the error is not with our own formula or method. There are idiosyncrasies in special cases, but they are rare and not to be our guide to practice. He gives an account of three cases showing the need of adaptation to the conditions in percentage formula feeding.

3. **The Widal Test.**—Robin describes the technique of the Widal test, the special apparatus devised by him for the drawing of but one drop of blood, and insists on the need of high dilutions in making the test, since one drop of normal blood, diluted 1 to 5 or 10, may at times produce agglutination. It is not difficult to obtain from the bacteriologist a culture of typhoid bacilli which can be kept in sealed tubes and be available at any time. The last cultures he had were sealed for eight months, and the bacteria none the worse for the confinement. He points out the difference between pure and pseudo reactions, and gives illustrations of them. The time limit is a matter of much importance, and the irregularity practiced in this regard is to be deplored. He would recommend the following: Dilution 1 to 10, time limit five to fifteen minutes; 1 to 20, fifteen to thirty minutes; 1 to 40 to 1 to 100, thirty to sixty minutes; 1 to 100 to 1 to 200, one to two hours. That would mean that if within the specified time a considerable number of bacilli are found actively motile or, if dead, fail to arrange themselves in clumps, the reaction is to be pronounced negative, irrespective of the clumps which have already formed. He says there is no reason why the general practitioner who is removed from municipal laboratories may not make the Widal test himself, if he is properly instructed.

7. **Erythromelalgia.**—Elsner reviews the history of erythromelalgia and reports cases. He does not consider the condition as yet worthy to be called a disease per se; it seems to be attendant to a great variety of conditions. He is inclined to consider it as a circulatory rather than a nervous disorder, the result of secondary vascular changes.

9. **Gelatin Injections for Aneurysm.**—Three cases of thoracic aneurysm were treated by Conner by gelatin injections. In two they had to be discontinued because of severe local pain. In one case where seven injections were given, a very slight improvement could be detected, in another a slight increase of the symptoms was noticed, while the third died under treatment, from rupture of the aneurysm. The autopsy showed no evidence of recent thrombosis, though the conditions were favorable for such formations. Aside from pain and local irritation no bad symptoms were observed in any case here noticed. He is not ready to conclude that the method has no therapeutic value, since in none of these was the treatment fully carried out, but he thinks its usefulness is seriously impaired by the severe pain which it often produces.

10. **Ameba Coli.**—The following, Craig claims, have been demonstrated by the study of stained specimens of ameba coli: 1. That vacuolization is a degenerative process, as the young amebæ show no vacuoles, the full-grown healthy ones, few, while the amebæ in which they are most numerous are degenerate bodies, showing neither a nucleus nor inclusions of any kind. 2. That there occur in all but the degenerate forms of amebæ, small, round or oval, unstained areas, uniform in appearance, and most numerous in the large, full-grown forms, and entirely absent in the vacuolated shells of amebæ. These areas resemble similar ones observed in stained, segmenting malaria plasmodia, which are, in them, due to the young spores, which take the

stain but faintly. Reasoning from analogy, it may be that these areas in the amebæ are also spores. 3. That in the protoplasm of the ameba, there occur peculiar structures, evidently not bacterial in nature, the significance of which it is impossible to decide. It may be that they are certain crystals which occur in the feces and which have been absorbed by the amebæ. 4. That degeneration of the amebæ takes place in two ways, i. e., by vacuolization and by fragmentation.

11.—See abstract in The Journal, xxxv, p. 448.

15. **Biliary Calculi.**—Beck reports his success with skiagraphy of biliary calculi *in situ*, and gives the essentials for success. The first condition is a strongly built and powerful tube which will bear a fifteen-inch spark for about five minutes without becoming too hot; it should be of medium hardness so as to permit the permeation of soft tissues without the denser ones, and this can be best decided by its effects on the hand. If the bones of the wrist appear grayish-black, but well defined, while the softer tissues show but little, the tube is suitable. If the tube is too soft the bones will be intensely black. The tube should always be new, as later they show less contrast. The position of the patient is also important; he should lie on his abdomen with about three pillows underneath his clavicles, so as to bring the gall-bladder nearer to the photographic plate. Another point is that the rays should not penetrate the abdomen in the vertical position, but from the side, so that the thick an less transparent tissue of the liver is not traversed in its whole diameter. The direction of the rays at an angle of about 70 degrees to the slant is best. The bowels should be freely evacuated. He admits that the method needs further improvement, but he maintains that even a faint skiagraphic reproduction of biliary calculi proves their existence to the expert, though a negative result cannot insure their absence.

17. **Specific Treatment of Dysentery.**—The points made by Cruikshank are that dysentery is contagious and infectious, that the germ is introduced into the system through food and drink, that the disease is the same wherever it is found and only varies in its intensity. As to the majority of therapeutic agents, they are usually useless and, in many cases harmful, but the sulphate of magnesium properly administered in the acute form of this disorder acts as a specific.

21. **Gonorrhea.**—Woodruff treats gonorrhea by the use of hot normal salt solutions, the good effects of which were first noticed accidentally, but which he has followed up with good success. He usually gives an astringent injection to use two or three weeks after leaving the hospital. He suggests the possibility that gonorrhea is a self-limited disease, with periods between forty and sixty days. Chronic and severe cases would then occur in persons of abnormal lack of resistance, and in those of bad habits generally.

23. **Colitis.**—Bolton reports a case of severe colitis treated by the formation of a cecal colostomy with a valvular opening through which irrigation of the colon was carried on. From the first the diarrhea began to improve, and at the end of two weeks no ulceration of the mucous membrane could be seen, while at the end of the treatment the condition was *apparently* normal; the patient had gained 10 pounds. A pad was worn for twelve days, at the end of which time the fistula healed. A small ventral hernia has appeared at the site, but he thinks it can be easily controlled by operation. In the future he shall adopt the intermuscular incision of the abdominal wall.

28. **Intestinal Anastomosis.**—Cumston's article is a historical one, in which he calls attention to the fact that in the work on surgery, published in 1769 by Bertrandi, he gave an account of a case where the trachea of a calf had been dried and softened in hot alcohol, then covered with Peruvian balsam and used as a bobbin in intestinal anastomosis with success. This method of intestinal anastomosis even then was an old one, since it was mentioned by Pierre d'Argellata that four surgeons had employed it, the pieces of trachea being afterward expelled in the natural way. He is certain that this refers to the end of the thirteenth century. He also mentions other operations described by Bertrandi, including that for extrauterine pregnancy.

38. **Non-Obstructive, Post-Operative Anuria.**—Brown reports a case of post-operative anuria due to delayed surgical shock, which was interpreted as a manifestation of auto-intoxication due to renal suppression in a person of poor constitution and emotional temperament. The possibility of the septic state was also conjectured. He uses the case to point out the mistakes made and the measures to be taken for their avoidance in future similar cases. In such a patient with a questionable heart he would in future give a large stimulating enema and have it repeated immediately after the operation if there was then the smallest indication. Nitrous oxid gas and ether should be employed for the anesthesia, preferably to chloroform. The medication should be given subcutaneously or by rectum, and all vomiting met with hot lavage. The first manifestations of anuria would be looked upon, where the pulse is small and rather rapid, as due to vasomotor paresis or cardiac weakness with lowered renal pressure, the result of shock, and stimulation to be employed.

39. **Stone in the Kidney.**—Bevan's article notices the use of the *x*-ray in the diagnosis of kidney calculi: As regards his own experience, which includes seven nephrolithotomies and two cases in which the stones were removed from the kidneys converted into pus sacs, he has been agreeably surprised in having no mortality, and he believes that the mortality from nephrolithotomy is not so great as we have beeen led to suppose. The prognosis as regards permanent cure is not so good as after operation for bladder stone or gall-stone, still, in some cases the operation has been followed by complete and permanent cure. He thinks the best incision for nephrolithotomy is an oblique one, beginning a finger's breadth below the last rib and running obliquely downward and outward to a finger's breadth above the anterior superior spine. This can be easily extended by splitting the external oblique downward to get the fullest exposure of the ureter, if necessary. The kidney is freely loosened from its bed so that it remains attached only by its vessels and ureter, and can be brought out of the wound in perfect view unless in very obese patients, while the operator can in them control the pelvis and vessels. He says: "Don't be afraid of large incision." "Don't be afraid of dislocating the kidney." The kidney, its pelvis and vessels under perfect control, is split by an incision two or three inches in length on its convex border, the pelvis opened and examined, and the stone or stones removed. Then wash out with a hot normal salt solution, carefully examining for remaining fragments. If none are found close the wound with deep medium-sized catgut, the external wound with buried catgut and silkworm gut, excepting a small portion for drainage. Where pus infection exists, the pelvis should be drained. Where stone is found by the *x*-ray and can be diagnosed by palpation, a small incision can be made and the pelvis closed by Lembert's sutures, as has been done by Morris. Care should be taken to prevent pushing of small stones into the pelvis and dilated ureter and, where the kidney is not brought out of the wound, pressure can be made with the fingers to collapse the pelvis and prevent a stone slipping in during the efforts at removal.

40. **Hernia of the Fallopian Tube.**—Morf reports a case of this condition and discusses its etiology, morbid anatomy and treatment. In this case the woman probably had congenital hernia of the left oviduct, complicated by epiplocele, the fat of which underwent serous change. Shortly before the hernia became irreducible, the patient probably acquired an acute vaginitis, the infection extending upward into the hernial sac. The microbes, finding a favorable culture-medium on the omentum, multiplied, exudation and pus formed, and as a result the hernia became increased in size and irreducible. The diagnosis is not always possible in these cases; in none of those reported has it been absolutely correct. The radical operation, he thinks, is demanded in all instances. The paper closes with abstracts of reported cases in the literature.

42. **Resection of Pendulous Abdominal Wall.**—Peters reports a case of pendulous abdominal wall in which an immense transverse gore of the enlarged adipose abdomen was taken out, leaving the patient after recovery in a good condition with a reduction of over 60 pounds of weight and a normal abdomen. He

refers to a previous case similarly operated on by Bullitt with good results.

43. **Hydrocele.**—Tait recommends eversion of the tunica vaginalis as a cure for this condition, and describes the operation; also a simpler one first published by Longuet and given his name, though Tait himself employed it independently of Longuet's publication. The operation consists essentially in the inversion of the cellulo-fibro-vaginal layers without decortication or hemostasis; the testicle is transposed. A transverse fold is taken up over the testes and cut with the scissors down to the serosa, under local anesthesia. The serosa is cut in like manner, neither cut exceeding 3.5 cm. The testicle is then drawn out upward and forward, the scrotum being at the same time pulled in the opposite direction. The tunica vaginalis and overlying fibrocellular tissues follow and are turned inside out. One or two sutures are taken to secure the vaginalis in its new position; these stitches are placed in such a manner as to avoid injury or strangulation of the cord. Chromic catgut (two weeks) is perhaps preferable to the ordinary gut, which is absorbed too early. The testis is not placed in its original position, but a new bed is made for it in the middle of the inner lip of the incision by gently dissecting the cellular tissue with the finger. The resulting new cavity is inside of and parallel to the old cavity. The testicle is slightly twisted on its axis, not being in normal anteversion but in retroversion, rotated inward a quarter of a circle and lying directly against the raphe. The position of the testicle may be defined as retro-latero version. The wound is then closed with two or three stitches. The operation is completed within a minute or two; no hemorrhage is noted; and the immediate effects are barely noticeable, thereby differing radically from all the other methods. There is no local reaction or infiltration of the soft parts, no tenderness, and within a few hours after the operation palpation of the testis does not elicit more than the normal sensitiveness. Consequently, the patient may resume his work on the following day. Nothing simpler, neater, nor more expeditious could be imagined. In a very large hydrocele, Longuet combines the above procedure with partial excision of the vaginalis, using elastic clamps and a continuous hemostatic catgut suture on the cut edges of the serosa. He claims that this operation will prove serviceable in the majority of cases of hydrocele and cysts, also where the surgeon is desious of exploring the serous sac of the tunica vaginalis, testis, or epididymis, and in some cases of hernia complicated with hydrocele and in the presence of numerous cysts. Three cases are reported.

50. **Hallucinations.**—The general subject of hallucinations is reviewed by McCorn, who summarizes his conclusions in regard to them as follows: Hallucinations are not new creations; they are composed either of present or of latent memory-pictures or ideas, and are accordingly designated concomitant or spontaneous, respectively. They are not due to an external stimulus, but to one within the sense organ itself—one acting on its sensory tract or the sensation cells of the brain cortex. Hallucinations may affect any or several of the senses simultaneously, and influence thought and action according to their contents and the importance ascribed to them by the patient. They may be due to toxic conditions—whether caused by drugs or infectious diseases, disorders of nutrition, the effects of extreme heat or cold—and often accompany the functional neuroses. They are particularly common in paranoia and dementia in their various forms, but occur more rarely in the affective psychoses.

55.—This article has appeared elsewhere. See The Journal of February 2, ¶116, p. 350.

56. **Bacterial Poisoning in the Lower Organisms.**—Klingmann's paper is a statement of the facts which have already been published by him and noticed editorially in The Journal, xxxv, p. 1218, on the influence of bacterial toxins on vegetable forms of life, algæ, etc.

60. **Interstitial Keratitis.**—It is assumed by Callan that the majority of cases of this condition are due to inherited syphilis, and the question may arise as to whether this can be avoided. The conclusions which he reaches are: "The offspring of syphilitics show the evidences of the inherited taint in only a slight percentage of the cases; that is, if we except those children under 5 years of age. Only a slight percentage of such children develop interstitial keratitis. When the disease attacks one eye, all our treatment appears to be powerless to prevent its development in the fellow eye. We may possibly delay, but we can not prevent, the outbreak of interstitial keratitis in certain cases."

72. **Trachoma.**—The method proposed by Jameson seems to be a sort of mild superficial grattage, with a special instrument devised to attack superficially and repeatedly and thus eliminate all granular growths.

76. **Influenza and Glaucoma.**—The physiologic relationship of influenza and glaucoma are illustrated, de Schweinitz thinks, by the case which he reports. It started, he says, through the axial neuritis which is so frequently caused by epidemic influenza and which more frequently than perhaps any other condition, is a starting point of glaucomatous excavation of the nerve-head.

77. **Methyl Alcohol Blindness.**—Cases of Jamaica ginger blindness that have been reported have been already noticed editorially. Harlan reports two in which an analysis of the ginger essence was made. It seems that blindness is not only caused by Jamaica ginger essence, but by others, as lemon, peppermint, etc., which are made up with methyl alcohol.

79. **Jaundice from Gastroptosis.**—The patient whose case is reported by Steele had an attack of abdominal trouble, possibly hepatic colic or some gastro-intestinal inflammation which probably involved the peritoneum, with formation of adhesions. After this came symptoms of chronic gastro-enteritis. In the course of a year jaundice appeared, and steadily increased, with moderate loss of weight, and slight secondary anemia and leukocytosis. Inflation of the stomach showed decided gastroptosis. The stomach was restored to its place by a belt and the jaundice immediately began to improve and in seven months disappeared. Bile is not present in the urine and has reappeared in the stools. He discusses the possibility of gastroptosis causing jaundice by obstruction of the bile-ducts, and concludes that this can not be the case without adhesions from some previous inflammatory condition, such as was supposed to have occurred in this case.

81. **Ammonium Persulphate.**—Ravenel and Gilliland have experimented with this salt, which has only of late years been reduced to such a price as to make it available for a disinfectant. He finds that, experimenting with solutions of various strengths, it kills the microbes of diphtheria, typhoid, and ordinary pus microbes at various periods from fifteen or twenty minutes to one and one-half or two hours, and the anthrax spores are killed by a 5 per cent. in thirteen hours. He finds it also of considerable value as a deodorant. Forty c.c. of a 5 per cent. solution was added to 530 c.c. of decomposed blood and boullion, and almost thoroughly deodorized in twenty minutes. Ribbons of delicate colors, immersed in a 10 per cent. solution for one and two hours, showed no apparent change of tint.

83.—See abstract in The Journal, xxxv, p. 1171.

86.—Ibid., p. 1104.

88. **Gall-Bladder Surgery.**—Three cases are reported by Munro, which he thinks point out the necessity of early operation in all marked cases of gall-stones, since, after the attacks are allowed to go on, the operation becomes, for some reason not yet explained, a serious undertaking. The ideal cholecystotomy is worth trying if the surgeon is sure that this is not contra-indicated. Cholecystitis is better drained surgically than medically, other things being equal. The possibility, not so remote as has been heretofore considered, of pancreatitis, should weigh on the side of urging operation for gall-stones. The majority of gall-bladders can be reached easily and properly through a short vertical incision in the outer third of the rectus. Any nerves coming in the way can be pushed aside and not destroyed if care is taken.

90.—See abstract in The Journal of January 12, p. 127.

91. **Hernia.**—Kocher's new operation is described by Renz, which is a modification of his old method, as follows: In the new operation the small opening above and outward to the

internal ring is continued into the peritoneal cavity, a long forceps introduced into the inside of the sac, its end caught and pulled; the other steps of the operation are the same as above. This inversion of the sac is the essential point; it forms a pyramid toward the inside of the abdominal cavity instead of outward into the canal; consequently, every time the patient coughs, the abdominal wall distends and he is, as it were, trying to pull his internal ring into the abdominal cavity, or at any rate the sac. With this operation the patient remains in bed but two weeks; the results are excellent, Kocher claiming but 3 per cent. of returns; the operation is simple and is ideal in its plan. Unfortunately the method is not applicable to direct herniæ, nor in the oblique ones where the sac is too thickened and enlarged, but in suitable cases Renz finds it highly useful and recommends it.

99. **Sphenoidal Wing Sinuses.**—Douglass calls attention to the extension of sinuses of the sphenoid into the sphenoidal wings, and the variation of their development, illustrating the anatomical possibilities with a number of plates. The practical bearing of the existence of these cavities is that disease may continue in them even after that in the ethmoid cells is cured. These accessory sinuses, therefore, will escape treatment and trouble may ensue The possibility of their existence should be borne in mind and their anatomical relations studied.

100. **The Tuning-Fork Test in Antral Disease.**—The use of the tuning-fork for testing for disease of the maxillary antrum is recommended by Kuyk. If the antra are free and clear, the tone may be heard with equal distinctness and for a like duration over each side and on the first and second molars, but if one antrum contains fluid, its tone should be fainter. If the symptoms are obscure and transillumination gives a shadow on the one side and none on the other, with subjective symptoms indicating disease, the use of the tuning-fork may confirm the diagnosis. He has also used it in cases of frontal sinus disease, and thinks it may be used with other conditions, in mastoid and ethmoid infections.

104. **Choroidal Melanosarcoma.**—This article reviews the symptoms and stages of the condition and reports three cases. Alter's conclusions are summarized as follows: "1. Melanosarcoma of the choroid is a fatal disease. Probably not more than 15 per cent. make an absolute recovery after operation. 2. The prognosis of this affection, though grave in all stages, is best with an early operation. 3. It is well-nigh impossible to make a diagnosis of acute inflammatory glaucoma due to tumor when the fellow-eye presents a glaucomatous aspect, as evidenced by Case No. 1 recorded in this paper. 4. The round-celled highly vascular tumor speaks almost unequivocally of a fatal termination. The spindled celled growth gives a much more hopeful outlook. 5. The presence of melanin in the urine give strong evidence of metastasic involvement. It foreshadows a fatal termination."

117. **Climate of Western Texas.**—Rawlings describes the climate of El Paso, which he thinks possesses the essentials of sunshine, dryness and rarefied air suitable for the proper treatment of pulmonary diorders. Bronchial asthma is also greatly benefited, but the fibroid form of phthisis is not so much so, nor is laryngeal tuberculosis. The climate is at its best for these cases for seven months of the year. The mid-summer months, which is the rainy season, are less advantageous, but there is a region, high and spruce-covered, within 120 miles, which furnishes ideal conditions. Cases in the late stages are not benefited by the climate anywhere.

138. **Suprarenal Extract.**—Bates gives his experience with suprarenal extract in various ocular troubles. He has treated many recent cases of conjunctivitis successfully with local applications, and found it a valuable remedy in keratitis, iritis, glaucoma and lacrimal disorders. Two cases of lacrimal fistula have been cured without other operation. As a hemostatic for eye operations, he believes it the best, and he considers it a safe remedy to use in all inflammations of the eye. When it does good after the local use, the benefit is apparent in less than a minute.

147. **Hemoglobinuria.**—McElroy endorses as rational the advice of Bastianelli to use quinin when malarial parasites are present in the urine, and not if they are absent. If quinin has been given before hemoglobinuria appears, and no parasites are in the blood, it should be suspended, but if the parasites persist, it should be continued. He reports cases and thinks on the whole, however, that the better plan is to give quinin to prevent the attack, and suspend its use as long as hemoglobinuria and albumin continue. Then, if fever continues, quinin may be given successfully without danger of producing another attack. In oliguria and anuria the best plan is to withhold quinin. When diarrhea is absent, he gives calomel in 10-gr. doses, at intervals of three hours for three doses, and if this does not act sufficiently, assists its action with hyposulphite of soda. At the first appearance of oliguria the safest procedure is to apply dry cups to the loins, followed with poultices, and administer normal salt solution hypodermically.

148. **Hemoglobinuria.**—Laws thinks it is necessary to determine whether the micro-organism is active, to intelligently treat a case of malarial hemoglobinuria. Where the organism is still active, he would give quinin, but where the condition is more of a toxemia due to spent activity of the organism, we should discard it. As a general rule, where the fever is of an intermittent type, or even a remittent type with chills, quinin should be given, but remittent fever with slight variation in the temperature is not often thus benefited. He mentions the use of sodium hyposulphite, but does not apparently endorse it. He thinks, however, elimination through the bowels and kidneys is of prime importance.

152.—See abstract in The Journal, xxxv, p. 841.

FOREIGN.

British Medical Journal, March 9.

Neglect of the Actual Cautery in Surgery and Its Value in the Treatment of Pruritus Ani. William M. Banks.—The neglect of some old methods which in former times had been abused is regretted by Banks, and he calls special attention to the use of the actual cautery which, he maintains, may be of great value in certain conditions. Among them he mentions syphilitic periostitis, in which the cautery might be more extensively used, especially in the late forms. He reports a typical case in which he obtained relief with this method where other means had failed, and also certain joint diseases, not the white swellings of children, but the gouty or rheumatic gouty conditions. He says that we have neglected this method too much and gives two or three patients' accounts of their experience with it after others had failed, one in which chronic arthritis of the knee, for example, had been treated with the Thomas splint without benefit and was almost immediately helped by cauterization. Still another condition is spinal inflammation after injury, and in conclusion he mentions a disorder for which the use of this remedy seems to be almost new, viz., pruritus ani. The great majority of the ordinary cases of this form of pruritus are curable when the cause is found out, but there are a certain number in which he could find no evidence of any local or systemic cause, and yet the itching is most intense. For some of these cases he believes the actual cautery will be the best form of treatment and reports one or two. It is only in those very serious cases in which no cause can be found that he ventures to recommend it; he has used it perhaps a dozen times for this purpose in the last twenty years. The value of the remedy, he says, lies in its being unfailingly curative in certain otherwise intractable cases.

Diseases and Disorders of the Heart and Arteries in Middle and Advanced Life. J. Mitchell Bruce.—This is the first of a series of Lettsomian lectures on diseases and disorders of the heart and arteries in middle and advanced life. The mode of inquiry which Bruce purposes to follow is by an analysis and study of a large number of instances, their origin, clinical characters, course and result. He thinks that perhaps our attention lately has been too much confined to the pathologic states of the heart and arteries and too little to causes which produce them. Arterial sclerosis is too often accepted as the final diagnosis, without regard to the actual nature of the general pathologic factors, whether strain, syphilitic, gouty, or otherwise. He first notices the normal heart after the age of 40. The blood-pressure up to 45 is apt to be high, but at that age remarkable changes occur. While the arteries continue to increase in circumference, the blood-pressure falls and the heart begins to diminish in size. These three features characterize the circulation for the next twenty years. The fall in the size of the heart is partly accounted for by the widening of the arterial trunks, but not entirely, and the other causes which he suggests are the probable reduction of mechanical stress due to bodily relaxation, the loss of vasomotor tone in the splanchnic area, and chronic diseases which come on at these periods. At 65, other changes occur: the peripheral resistance becomes increased, the blood-pressure rises, the heart once more increases in size, till, at 75 years, it is as large as at 45, and the hemoglobin value of the blood again proves to be higher. The arteries continue to grow wider, thicker and longer, another proof that the size of the heart is not diminished altogether by their caliber. These become strengthened by the fibroid tissue and the heart responds to the altered mechanical condition in the arteries. In the great majority of cases of persons who have passed to old age, the arteries are still generally sound, according to the investigations of Humphry and others, and the actual changes may be considered probably not normally senile in their nature. They are rather the effects of pathologic processes which the author enumerates. 1. First among these he mentions physical strain. He says that we must speak with due caution as regards muscular exercise, but he feels sure that after 45 years of age, excess in this direction may be dangerous. The principal safeguards which the arteries possess against strain is their extensibility and elasticity, but the disorders liable to occur at this age, including gout, are just the ones which are accountable for weakening of the walls of the vessels. 2. As to the nervous system, he mentions cases where nervous strain in conditions of special stress have caused arterial and cardiac degeneration. However clear the direct connection between nervous strain and cardiac vascular disease happens to be in some heart cases, it is in others unreal and this is a matter of great importance. The nervous temperament often drives the subject of it to physical overwork with insufficient rest or sleep, and to the unwise attempt to remove the nervous exhaustion by violent muscular exercise. Worry often induces recourse to alcohol and stimulants, while many of the complaints of nervous depression, lowness and worry are really due to gout, influenza, etc., which are at the same time the true cause of the cardiac symptoms. 3. Extrinsic poisons, alcohol, tobacco, tea, coffee and lead are next considered. There is no need of proof of the reality of the connection of these with cardiac disorder, and they will be mentioned further on under the head of diagnosis. 4. Disturbances of metabolism are taken up next, including gout, which seems to be favored by substitution of quiet for active healthy exercise, and while the demands on the growth of the alimentary system have declined, the pleasures of the table are too much indulged in, with the result of functional disorders of the liver and gout in various forms and many other disorders of that character. At the same time the arterial tension rises and stimulation of the vasomotor center by nitrogenous waste occurs, and the arterial pressure, heart-vessels and kidneys are kept under excessive strain to carry off the extrinsic poisons; like other vessels working under strain, they are the first to suffer, so we have chronic Bright's disease, cardiovascular degeneration, etc. 5. Syphilis by no means always ceases to attack the organs of circulation after 40, and is a standing danger to the heart and arteries of men of middle age, and even in declining years. 6. Among acute diseases he notes influenza in particular, but also typhoid, rheumatism, diphtheria and syphilis in various forms. 7. The chronic disorders, anemia, exhaustion, etc., are next considered. 8. Among complex causes he first mentions emphysema and other chronic diseases of the lungs and pleura, which strain the right ventricle, and chronic Bright's disease, which similarly strains the left ventricle. Various agencies combine together and the result is disastrous. The wear and tear of life may be stated, in a general way, to be the cause of cardiovascular disease, but it must be remembered that in many cases the heart and blood-vessels may have been damaged in early life so that they fall victims to influences which would have been insufficient otherwise, and in the second place the heart and the vessels at 40, though apparently free from danger may be molecularly weak and unable to offer effective resistance even to ordinary strain. Lastly, the author calls attention to family idiosyncrasy, as in the case of hereditary senility where the patient becomes prematurely old. A type of cases described as family heart is noticed, where cardiac disease seems to run through various members of the family. We find men, say 30 years of age, with vessels already enlarged and lungs emphysematous without any history of respiratory strain.

Histology of the Urinary Tract in Its Relationship to Morbid Urinary Deposits. G. LESLIE EASTES.—The author first notices the normal and morbid histology of the urinary tract, describing the epithelial linings in the different parts. The Malpighian capsule and its neck are lined with a flattened epithelium very similar to that of the serous cavities. The first convoluted tubule has individual rodded cells with granular-looking protoplasm toward the free edge. The descending loop of the tubule and loop of Henle are lined with clear flattened cells, while the ascending limb and second convoluted tubule are like the first portion of the tubule with granular rodded epithelium. The junctional tubes and ducts of Bellini, which latter open directly into the pelvis of the kidney, have an epithelium consisting of clear cubical or columnar cells. In the course of over 6000 microscopic examinations of urine, from cases of nephritis where centrifugalization was practiced, he has never been convinced that he has seen the clear flattened epithelial cells of the Malpighian corpuscles. He has, however, he believes, recognized the granular rodded epithelium, and the cubical or columnar epithelium of the latter parts of the tubules is most commonly found when renal epithelium is present. This is what might be expected since the lumen of the collecting tubules is broad enough to allow the passage of isolated cells with ease, while the lumens of the loop of Henle and of the collecting tubules are so small that it is a matter for surprise that the epithelium, peculiar to those situations, when shed, can squeeze its way through. In a few cases of examination of the urine in carcinoma of the kidney he has found abundance of renal epithelium. Epithelial cells do not appear isolated as in tubal nephritis, but were frequently found in clumps indicating a rapid proliferation. Of sarcoma of the kidney, cysts, angeioma, etc., he has nothing to say. In a few cases he found indications which led him to suggest the existence of buried calculus, which was found later. These indications were the characteristic renal blood, with hyaline casts, epithelial cells, the size, shape and appearance of which suggested an origin in the collecting tubules; there were no epithelial casts, but blood-casts were present. In every case there was much free uric acid in the deposit, and the crystals aggregated together. Pelvic epithelium was lacking, or, if present, in very small quantities. Chemical examination showed more albumin than was accounted for by the blood present. There was also in each case a history of tender kidney with, usually, reflected pain. The characteristic epithelium of the renal pelvis is what is known as transitional. It consists of about four layers; the free edge with flattened cells; the next one or two, spindle or pear shaped, and the last layer composed of cells which are remarkably pleomorphic. The cells of the deeper layers are most easily recognized and the commonest forms a rounded body with granular contents and nucleus, usually tailing off into prolongations, the length of which may be two or three times that of the diameter of the body. These are only shed when there is extensive damage to the renal pelvis and the movement of the stone frees them. There are also usually blood and hyaline casts, and a slight though constant leucocytosis in this condition. In pyelitis due to other causes, similar cells, together with pus, are usually found, and the deposit contains casts. When the pyelitis is due to any other disease than tuberculosis, numerous bacteria are present. Eastes frequently noticed that in pyelitis casts are present which are broad and contain many bacteria, though pus casts are rare. In all lesions of the renal pelvis he has found more albumin than the microscopic examination would apparently indicate. The renal pelvis may contain neoplasms usually of the papillomatous variety, and they not infrequently become malignant. He has been able to diagnose this condition from an examination of the deposits. Of the ureter, he has nothing special to say, but the diseases of the bladder that can not be diagnosed by examination of the deposits are very few. In cystitis the cells are usually derived from the surface of the epithelium, and there are few of the more characteristic tailed and pear-shaped cells of the deeper layers of the mucosa. In the epithelium the cells are highly pleomorphic, but the most characteristic cells are found in cases of villous growth; papillomata usually, but sooner or later almost certainly become malignant, with a marked tendency to infiltration at the base. These cells are exceedingly long and of remarkable thinness. The urethra is lined with a columnar epithelium, but it is rare to see this in perfection in the urinary deposits. It is only seen well where a small calculus has been passed. In gonorrhea or urethritis of septic origin there is much epithelium, but it is swollen and altered in appearance. If the prostate supplies *fresh epithelium*, it is unrecognizable. The only thing he has to say about it is that in the urine of lads between the ages of 14 and 20, which is at the period of prostatic growth, he has frequently found clumps of clear, luminous, pear-shaped cells imbedded in a mucoid material. He has never seen this in girls, and therefore is inclined to think they may be derived from the prostate.

The Lancet, March 9.

Public Health and Housing. John F. J. Sykes.—This second lecture is devoted to the effects of certain kinds of dwellings upon the health. The author notices the peculiar conditions, bad ventilation, coldness, water-supply, etc., and remarks that these are the characteristics of the jerry-built dwelling-houses, the flimsiness being the cause. It has been shown by experiments that putrid gases predispose animals to the *infection* of attenuated morbid germs of disease, therefore, bad drainage and sewage will have its direct influence upon the health. The latter part of the lecture dwells on special forms of structures, windows, streets, admission of light, air, etc. He condemns the inside staircases for compound dwellings, as they are seldom properly ventilated. The common stairway should be the external one. He finds that it is a mistake to make large rooms for poor people, as it only leads to overcrowding. If the same sized family that could *live in one very large room* should live in two smaller ones, *there would be a better* sanitary condition, as well as physical well-being.

The Statistics of Gastric Ulcer, with Special Reference to Gastric Hemorrhage, Its Frequency and Fatality. Byrom Bramwell.—The accepted statistics of gastric ulcer are questioned by Bramwell, who thinks that the methods of estimating them are unreliable. It is probable that a larger portion than 5 per cent. have at one time or other in their life suffered from gastric ulcer. This may or may not be correct, and is only taken as approximately so. It is difficult to estimate the mortality from this cause, and he thinks it may vary very materially from year to year. He also criticizes Mayo Robson's conclusion with regard to the frequency of fatal hemorrhage. Errors of registration are *perhaps* less likely to occur in cases of hemorrhage than in cases of perforation. He believes that physicians of large experience will agree with him that death from hemorrhage *from gastric ulcer very rarely* occurs. He can himself recall but one case in hospital practice, and another that he saw in *consultation*, from what was *thought* to be duodenal ulcer, which, however, may have been gastric.

Pure Urea in the Treatment of Tuberculosis. *Henry Harper.*—The writer says he has used pure urea in a large number of cases of tuberculosis, and believes it to be a remedy of superior value to any used at the *present time*. With its administration, he applies treatment in the broad *sense, pure* air, plenty of nutritious foods, especially those rich *in albumin. These* act as an antitoxin, and render the tissues and fluids of the body proof against the bacteria finding a suitable *soil*. Twenty-nine cases are reported, all diagnosed microscopically as well as otherwise, and all apparently hopelessly bad cases, with recovery or *improvement*. He *remarks* that careful and systematic examination of the urea *excreted* by the kidneys previous to the treatment is needed. In only two cases in which he examined the urine with Martindale's ureameter has he found any increase in the quantity of urea excreted. *One* thing he feels sure of is that urea, *given* as he employs it, in scruple doses three or four times daily, or hypodermically, has produced cures in some and improvement in other serious or bad cases, that he has been *heretofore* led to conclude were incurable.

Janus (Amsterdam), February.

History of Syphilis. L. Hirschberg.—This thesis states that no ancient writer has described syphilis. Errors of interpretation have *been found in all* the passages that have been cited as purporting to describe what is *now known* as syphilis. A complete *description* is, however, on record in the Japanese government annals, dating from A. D. 900, when an official report was made of all the diseases existing in Japan at that time. The geographical discoveries of the fifteenth century permitted the introduction of syphilis into Europe with the malignancy usual to a newly-introduced disease. Certain parts of Europe were spared until long afterward, as *for* instance, Schleswig-Holstein and certain points of Norway, where the endemic raged comparatively recently with *pristine* malignancy. The Russian province of Kosloff is *now undergoing* this experience. After a disease has been common for *generations*, the receptivity of individuals becomes less. Besides this acquired immunity, there is also an ethnic immunity. In Iceland, *for* instance, although syphilis has frequently been imported, *it* rapidly dies out. The natives of Madagascar are likewise refractory to a certain extent, while severe cases are numerous among the Malays. "Government regulation of prostitution has a tendency to retard the creation of immunity and favors the evolution of severe individual cases."

Bulletin de l'Academie de Med. (Paris), February 19 *and* 26.

Hemoglobinuria in Malaria. Troussaint.—The hemoglobinuric bilious fever of tropical countries is the direct result of malarial infection. The *syndrome is caused by a process of* special, transient demineralization of the blood, the result of the *alterations* in the liver, due to the malaria. Treatment should comprise the *administration of small doses of quinin* and the mineralization of the blood plasma by *subcutaneous* or intravenous *injection of salt solution*. These *injections* arrest the destruction of corpuscles by stimulating urinary *depuration* and thus *favoring* the elimination of urea, bile *and sugar*, all of which are *demineralizing agents*. At the same time the *injections increase* the isotonic *power of* the serum.

Appendicitis á New Disease. Lucas-Championnière.—*Even if we group all the obscure inflammations* of the bowels in the past, which may *include cases of appendicitis*, the total *does not equal* the number of cases of appendicitis in our day. It is *evident, therefore*, that it is comparatively a new disease, *unknown to our fathers*. Lucas-Championnière adds that whereas he had *occasion* to observe 34 cases of abscess in the iliac fossa, between 1882 and 1899, since 1899 he has seen 19. He *suggests* that the increasing *consumption* of meat, the epidemics of la *grippe and* the *neglect* of the *old-fashioned* salutary *measure* of an occasional purge are the *factors* that have resulted in appendicitis. Robin stated in the *discussion which* followed, that he had noted appendicitis 82 *times in* 1585 cases of hypersthenic dyspepsia with hyperchlorhydria. In this condition the waste of nitrogen *averages* 12.61 per cent. instead *of* the *normal* 5.4 per cent., and this favors irritation *of* the intestines. Pinard called attention to the frequency *of puerperal appendicitis*, having had occasion recently to observe 3 *fatal* cases in *one month*. Kelsch maintained that appendicitis is the localization of a general infection. It is usually a *chronic* process, with acute recrudescences, at the instigation of *some* secondary factor. He believes *that* appendicitis is even *more common* than we yet suppose, but persists in a latent symptomless form. Sahli calls it an "angina of the appendix," and compares it to the *guttural exanthem of* scarlet fever, *pointing* out the follicular structure of the appendix.

Bulletin Gen. de Therap. (*Paris*), February 15.

Efficacy of Guaiacol in Varices and Serous Effusions. Allahverdiantz.—The *region of the* varices or of the effusion is painted with *guaiacol*, *covered* with oiled silk and cotton.

This treatment is repeated morning and evening for ten to twenty days. The author states that he has thus cured 7 cases of varices of three to seventeen years standing, rebellious to all other measures. 3 of varicocele, 5 of hemorrhoids and 2 of hydrocele, the latter being completely cured in three to five days, without surgical intervention. Pleuritic effusions and edema of all kinds do not require puncture but heal under the use of guaiacol.

Echo Med. du Nord (Lille), February 24.

Treatment of Hemorrhoids. H. Folet.—The surgical treatment should always be dilation, either alone or accompanied by excision. The latter is done with the bistoury in case of non-infected hemorrhoids, but the thermocautery is to be preferred if they are infected. In simple cases hygienic measures suffice, re-enforced possibly by hamamelis or argyrin, which are sometimes, Folet adds, of a "great psychic efficacy."

Systematic Operation in Traumatisms of the Urethra. Carlier.—Every person with an urethrorrhagia consecutive to a trauma of the perineal region should be operated on at once, even in the absence of a tumor or of ecchymosis, especially if he can not urinate spontaneously within fifteen minutes. Carlier combines external urethrotomy and urethrorrhaphy at one sitting. He has observed a number of instances in which anatomic lesions were very severe, although the symptoms indicated only a slight injury. The fact of urination after fifteen minutes does not speak for the absence of rupture, as the bladder may spontaneously evacuate its contents.

Gazette Med. Belge (Liege), February 21.

Treatment of Whooping-cough.—J. E. Godeau has asked a large number of physicians how they treat whooping-cough. He learned that 32 per cent. use belladonna; 23 per cent. carbolic acid; 20 per cent. the bromids; 12 per cent. creosote; 6 per cent. antipyrin and 2 per cent. opium. Godeau himself recommends inhalation of creosote and antispasmodics after the bronchitis is quieted, Belladonna, however, may be used before this.

Journal de Med. de Bordeaux, January 6.

Fate of Insoluble Substances After Subcutaneous Injection. X. Arnozan.—It has been supposed until recently that only soluble medicines were suitable for subcutaneous injection. Late researches, however, have established the mysterious fact that the leucocytes take up undissolved foreign particles and then have a tendency to congregate at the site of a lesion or any *locus minoris resistentiæ* thus bringing the medicinal substance exactly where it is most needed. Besredka administered a fatal dose of arsenious acid to animals after he had caused a cold abscess by inoculation with dead tubercle bacilli. A remarkable proportion of the total amount of arsenic was found in the pus corpuscles of the abscess. Others have also demonstrated that leucocytes loaded with foreign substances accumulate at the points where lesions exist, Landerer experimenting with balsam of Peru and cinnamic acid, Stassano with mercury and Montel with calomel and iodoform. The research of the latter is described in his thesis (Bordeaux, 1901). When a substance is dissolved in the blood plasm it becomes generally diffused throughout the organs, but when it is insoluble it is taken up by the leucocytes and carried to the blood-forming organs especially, and to the excretory glands. These facts suggest a possible explanation of the benefits of revulsive measures, of Fochier's fixation-abscesses, etc. The leucocytes loaded with the foreign bodies accumulate at the site of the lesion, and in case of foreign or autopoisonous substances isolate and thus tend to render them harmless.

Journal des Praticiens (Paris), February 23.

Toxic Dyspepsia in Children. Sevestre.—Children between 7 and 15 sometimes present symptoms which suggest a serious condition, but they are in reality merely manifestations of a toxic dyspepsia and yield rapidly to appropriate treatment, Headache is the principal symptom, aroused or increased by study, also insomnia or nightmares, and fever recurring at intervals of four to six weeks, with sometimes vomiting, persisting several hours to two days. The apex of the heart may be displaced outward by the dilated stomach, with arrhythmia and palpitation on the slightest effort. Appropriate diet, massage of the abdomen and cold morning douches or frictions will relieve the toxic dyspepsia underlying these symptoms. The gastro-intestinal atony can be counteracted by ten or fifteen drops before each meal, of a mixture of 3 gm. of tincture of nux vomica, 4 gm. of tincture of calumba and 5 gm. of tincture of illicium. Roast or broiled meats should be replaced by meat that has been sterilized by long cooking.

Combination of Autotoxic Dyspnea and Angina Pectoris. H. Huchard.—The patient whose case is described presented evidences of a toxic alimentary dyspnea from cardiorenal sclerosis, associated with true coronary angina pectoris and neuralgic or false angina from peri-aortitis. Each complication requires different treatment; the dyspnea is controlled by an exclusive milk diet for ten to fifteen days, with 50 cg. of theobromin two or three times a day. The milk diet is resumed for five or six days twice a month afterward, accompanied by 25 to 50 cg. of sodium iodid during the day. At other times the diet should be restricted to vegetables, fruits, a little meat, one powder of 50 cg. of theobromin once or twice a day and a glass of Evain-Cachat water. If the milk produces diarrhea, it should be controlled with bismuth subnitrate, 1 gm. to each cup of milk. Kefir is another effective measure for control of the diarrhea. Constipation will yield to one or two teaspoonfuls of magnesia, or the usual measures. The peri-aortitic false angina pectoris indicates revulsive or analgesic remedies, but the coronary, true angina requires vasodilating medication to reduce the blood pressure, inhalation of amyl nitrite, subcutaneous injection of trinitrin during the attacks, and, during the intervals, trinitrin, tetranitrol or iodids by the mouth. This reduces the pain of the angina but does not affect the dyspnea, which can be controlled only by promoting renal elimination by the milk diet, which must be kept up as directed, at intervals, for months or even years.

To Expel the Oxyuris in Children. Deguy.—Four days are required for the course of treatment recommended. First a calomel purge and milk exclusively, for twenty-four hours, then 5 cg. of santonin before breakfast for two days, followed by a rectal injection of a .5 per cent. solution of nitrate of silver after a cleansing injection. It is retained for five minutes and followed by an injection of salt solution to neutralize any excess of the nitrate of silver.

Revue Gen. d'Ophthalmologie (Paris), February.

Traumatic Atrophy of the Optic Nerve. A. Péchen.—Injury from penetration of a foreign body into the orbit may cause blindness at once, from lesion of the optic nerve, without any immediate ophthalmoscopic injury. In a personal case related, a boy of 14 hit his eye against an iron rod, in the dark. The next day he could not see with it but no lesion, external nor internal, could be discovered for nearly fifteen days, when atrophy of the papilla became evident. Péchin has been able to collect only twelve similar cases in the literature, the earliest dating from 1873. He remarks that the prognosis should be extremely cautious in case of the penetration of a foreign body into the inner or outer angle of the eye, even when it does not remain in the eye, and in the absence of any appreciable lesion. Complete amaurosis, under such circumstances, should suggest a grave lesion of the optic nerve. It may show first as a discoloration and later as progressive optic atrophy, which will soon differentiate it from hysteria or simulation. The mechanism differs from that of optic atrophy consecutive to fracture of the optic foramen, which is itself consecutive to a fracture of the base of the skull or of the arch of the orbit. The atrophy in this case is due to the stretching of the nerve, which may be complicated by a direct traumatism.

Semaine Medicale (Paris), February 27 and March 6.

Quinin Treatment of Malignant Neoplasms.—Launois has recently reported a case of inoperable mammary carcinoma in which he relieved all the symptoms and restored the patient to active life, with partial retrogression of the neoplasm, by subcutaneous injections of quinin, as recommended by Jaboulay

The latter has recently discovered that ingestion of quinin by the mouth is equally as effective in such cases as its subcutaneous administration. He gives one gram a day, substituting Fowler's solution two days in each week, and applies locally a 10 per cent. quinin salve, which he states has a remarkable antiseptic action.

Spinal Cocainization as Treatment of Sciatica.—Manega and Pullé, in Italy, have cured a case of intense pains in the lower members accompanying hemiplegia and one of rebellious sciatic neuralgia, by the subarachnoid injection of 15 mg. of cocain or .75 c.c. of a 2 per cent. solution of cocain. The pains were abolished with a single injection, and have not returned.

The Flap Method of Treating Anthrax.—Sacchetti has successfully treated several severe cases of anthrax by incising the lesion in the shape of an X down to sound tissue below and on each side. The four triangular flaps thus made are turned back, and the surface beneath packed with rolls of gauze moistened copiously with ferric chlorid. The flaps are then replaced, separated from the surface below and from each other by the gauze. The lesion rapidly heals; a dry eschar is thrown off from the surface below, and when a healthy granulating surface is left, the flaps are replaced and sutured, leaving but a minimal scar instead of the extensive defect that usually results.

March 6.

Filiform Bacilli Sign of Malignant Neoplasm of the Stomach. H. Ehret.—When the filiform bacillus is found in great numbers in the stomach, the possibility of a malignant neoplasm must be considered. If this phenomenon is not accompanied by indications of considerable stagnation of the contents of the stomach, it is sufficient ground alone for the diagnosis of carcinoma. In 29 cases in Ehret's experience, in which the great number of these bacilli attracted attention at the first glance, the existence of a malignant neoplasm was established later by the course of the affection in 25, and in the remaining 4 there was almost complete stagnation of the stomach contents from atony or stenosis of the pylorus, and a tumor might have existed unperceived.

Centralblatt f. Gyn. (Leipsic), February 16 and 23.

Difficulty in Extraction of Fetal Skull After Separation from the Trunk. F. Neugebauer.—Seventy cases are reviewed, including a number that have not been published. Even such an expert as Hegar asserts that this complication, in one instance at least, rendered the accouchement the most difficult of all in his experience. It is frequently impossible to grasp the mobile skull. In 4 cases the patient died without extraction of the skull; in 16 the attempt to extract it was abandoned. In 6 instances the skull was spontaneously evacuated later, and in 7 it suppurated out in fragments. In 14 of the 70 cases the patient died. Cesarean section was done 6 times, and was successful in 3 cases. In one of these, Jaeggy experienced the greatest difficulty in extracting the skull from the small pelvis where it had become lodged. Laparotomy was done 11 times with 7 recoveries, and symphyseotomy once. The fetus was putrefied in 9 cases. The skull was separated by decapitation in 14 and torn off in 56 cases, in 23 by the attending physician, once by the woman herself, and once by the husband. Eleven patients were operated on for vesical or rectal fistulæ produced by retained fragments of bone, in one case sixteen years after the delivery. Narath succeeded in curing a patient who had a vesicovaginal and also a jejunovaginal fistula caused by perforation of the uterine wall by a piece of bone after fragmentary removal of the skull of a macerated fetus, one month after death at term. Neugebauer remarks that narcosis is imperative. If manual extraction is not possible, he proceeds at once to perforate the skull, according to Naegele's directions, and extract it with a cranioclast.

Cyst-Formation in Remains of an Ovary. H. Ehrenfest.—The question of neoplasms developing in the fragment of an ovary left after a conservative operation, is one of great interest. Fischer and Waldstein have recently reported cases of this kind, and Martin mentions six. Ehrenfest calls attention to five that have been reported in American literature since 1897.

Cbl. f. Kr. d. Harn u. Sex. (Leipsic), February 9 and March 16.

Syphilitic Cystitis. Chrzelitzer.—The urine was turbid, slightly acid and occasionally blood-stained, but with no sugar indican, gonococci nor tubercle bacilli. Urination was frequent and painful, with retention at times. The patient, a man of 45, denied syphilis and refused narcosis. The tonsils were congested. Local treatment induced merely slight, transient improvement. Finally the testicle showed signs suspicious of syphilis, and under specific treatment the cystitis was promptly and permanently cured. It must have been due to a gummatous lesion in the bladder, the first and only indication of the infection for years.

March 16.

Improved Urethroscopy. N. Nicolai.—The principle of the Welsbach light has been applied to the urethroscope by Nicolai. A very fine platinum wire, coated with thorium oxid, will bear without injury an amount of heat which would consume it without the protective coating. The light afforded is extremely brilliant. It is possible that the thorium takes up the heat and transforms it into light energy.

Deutsche Med. Wochenschrift (Leipsic), March 7.

Treatment of Gangrenous Hernia. W. Petersen.—Between 1877 and 1900, 309 cases of gangrenous hernia were treated at Czerny's clinic; 280 were operated on with a total mortality of 18.5 per cent. Petersen considers the Murphy button and Schleich's infiltration anesthesia the two most important improvements in treatment. The latter is a valuable protection against collapse and obviates aspiration pneumonia, which is the principal danger in operating for gangrenous hernia. Local anesthesia also permits the systematic, thorough evacuation of the contents of the afferent intestine. A long rubber tube is introduced, through which thin feces and gases are soon voided. When this ceases, a pint to a quart of water is allowed to flow into the intestine and this usually straightens it out so that more than three feet of the tube can be worked in. By flushing the intestine in this manner several times, assisted by light massage, incredible amounts of gases and feces are evacuated. The relief experienced by the patient compensates for all the inconveniences of consciousness during the operation. While this is being done the surgeon can be deciding as to the extent and intensity of the gangrenous process. Very recent cases of incarceration do not require such thorough cleansing. By these measures primary resection has become a much less serious operation than it used to be, and should be preferred for all cases of certain gangrene. Before they were introduced primary resection was done 15 times with 8 deaths, a mortality of 60 per cent. Since then it has been done 12 times with only 1 death, or 8 per cent. mortality. An artificial anus is an emergency makeshift. It should never be done except in case of severe collapse or of extensive phlegmons around the hernia. The latter, however, do not necessarily contraindicate primary resection. Reposition is not permissible if there is the slightest suspicion of a gangrenous tendency. Ten of the 18 deaths after reposition were from secondary necrosis of the intestines in the 20 or more cases in which there had been some doubt in regard to the vitality of the tissues, a mortality of 50 per cent. The loop was kept outside for observation in only 3 cases; one required resection later. The grooves where the forceps had been applied became necrotic, which never occurred in Petersen's experience when the intestine was replaced in the peritoneal cavity, and this suggests that the circulation may be unfavorably influenced by this procedure. Reposition was done 216 times, with a mortality of 11 per cent.; artificial anus 22 times, mortality 67 per cent., and primary resection 22 times, mortality 33 per cent. During and since 1898, an artificial anus was made in only 5 cases, with 5 deaths. The proportion of cases in which the operation was responsible for the fatal termination has been reduced from 33 to 12 per cent. during and since 1898. The article is concluded from Nos. 8 and 9 and contains the details of all the cases of primary resection.

Radical Operation for Hernia in Childhood. H. Maass.—During the last five years Maass has operated on 33 children for hernia, about 1 per cent. of all the cases he has had occasion to treat. Under 1 year of age a suitable truss will usually cure the hernia without operation. The tissues in childhood grow so rapidly that a plastic operation is unnecessary under 4, and was not required in any of his operations under 7 years of age. All have been permanently cured, many for more than two years. The child's serosa is so tender and transparent that it is not necessary to open the sac. This reduces the danger of infection. Maass merely pulls out the isolated sac, twists it several times and ligates it at the neck with silk. The wound is closed with iodoformed collodion, without other dressing. The sutures are removed the sixth day and the collodion renewed, which completes the operation. There is little or no general reaction and the local varies with the tender handling of the serosa. The most serious complications were in six cases of vaginal hernia. The principal danger is from the narcosis. In 4 cases there was extraperitoneal infection of the side of the scrotum, requiring drainage and tamponing. In one case the vas deferens or testicular vessels must have been injured, as necrosis of the testicle ensued, requiring its removal ten months afterward. An incarcerated inguinal hernia in a ten-months infant contained no intestine but the entire adnexa of that side, twisted and hemorrhagic. They were excised and the child soon recovered.

Sieve for Feces. Max Einhorn.—An ordinary flour sieve is mounted on a tripod standard and fitted with a cover sloping inward to an aperture in the center. The feces are placed on the sieve, the apparatus placed under the faucet and the handle turned as the water flows through. The feces are thus rubbed smooth and rinsed clean in three to six minutes, with less trouble than with Boas's sieve devised for the purpose (illustrated in The Journal of Oct. 6, 1900, p. 913). The flour sieve can be used alone without further adaptation.

Jahrbuch f. Kinderheilkunde (Berlin), January.

Relations Between Scrofulosis and Tuberculosis. E. Ponfick.—From the etiologic point of view there is a pyogenic scrofulosis, a bacillogenic, and a third mixed variety. Ponfick considers it an open question whether the conception of scrofulosis shall be carried over into the new century or not. It has certainly outlived its meaning as a specific affection, but until a more appropriate term is invented, it still serves to represent that anomaly in the constitution which influences the course of infections and imparts a special character to them. This constitutional disposition depends on the congenital or acquired enhancement of certain features of the childish organism, on the one hand, and on the other, on a congenital, abnormal tendency in the development of certain cell-complexes. It may also depend—but very rarely—on a direct, intrauterine transmission of the pathogenic agent. Future researches will find a fruitful field in the congenital deviations from the normal constitution, which betray a condition of weakness in certain regions of cells.

Purulent Cerebrospinal Meningitis Caused by the Influenza Bacillus. J. Langer.—After eleven days of severe, progressive and rebellious meningitis in a girl of 9, Langer resorted to lumbar puncture. About 8 c.c. of cerebrospinal fluid were withdrawn, which deposited a thick sediment of fibrin and polynuclear leucocytes, many containing influenza bacilli. The temperature dropped to normal immediately after the puncture, as at a crisis, and the patient rapidly recovered. He has noticed the same favorable result in a number of other cases of meningitis.

Wiener Klin. Rundschau, February 17 and 24.

The So-called Sclerotic Atrophy of the Hemispheres. E. Bischoff.—In the two cases reported, of progressive epilepsy with idiocy or dementia, the autopsy showed that one of the cerebral hemispheres was slightly smaller and harder than the other. In every other respect it appeared normal under the microscope and all tests. There was no atrophy nor sclerosis. In both patients and in others that have been reported, the course of the affection and the anatomic findings indicated an original encephalitis restricted to one hemisphere, but evenly generalized in this, and gradually retrogressing to complete anatomic restitution. It imposed, however, a premature limit on the physiologic development of the hemisphere, and left a permanent disposition to epilepsy. The first indications were symptoms of an acute encephalitis between the second and sixth years of age, and paralysis, with or without fever, lasting for days or weeks. The hemiplegia may persist or subside. The subjects later become feeble-minded or idiotic in most cases, and epileptic seizures usually follow after months or years, or may coincide with the first manifestations. In a few cases there was almost complete restitution in the nervous and psychic domain. In Muhr's case there was no epilepsy, merely slight hemiparesis and moral weakness, terminating in insanity. Kast's patient showed no signs of mental deficiency. In Bischoff's first case, and also in one described by Bourneville, and in another by Ollier, there were no marked paralytic symptoms. In his second case, on the other hand, the symptoms deceptively indicated a focal affection in the region of the cortical center for the arm. Spastic paresis and hyperesthesia were noted over the entire left side, explainable by defective functioning of the abnormally small hemisphere. Disturbances of this nature must entail the same symptoms as a diffuse partial interruption of the nerve fibers passing from the peripheral to the central masses of gray matter, as for instance by a tumor. These cases show that the central nervous system requires not only normal brain substance, but also a certain quantitative minimum for its normal functioning. The anatomical findings in these cases are similar to those in Struempell's pseudo-sclerosis, but the clinical course is entirely different.

February 24.

Cure of Lymphangitis with Massage. Batsch.—The advantages of massage in reducing inflammation, aborting phlegmons, and curing lymphangitis and lymphadenitis, have long been proclaimed by Batsch. He now relates a striking personal experience with a very severe lymphangitis, the result of infection from a cut on his finger inflicted while operating on a rectal fistula, and further infected at a five-hour medicolegal autopsy. In less than two hours after the infection had traversed the barrier of the first obstruction in the finer lymphatics, the lymph vessels in the upper arm were engorged with bacteria. He made an opening above and applied the galvanocautery to the wound. The arm and axilla were energetically massaged for one-half to one hour, two or three times a day, lubricating with gray ointment. The massage deprived the bacteria of the quiet necessary for their development, and obviated the danger of obstruction of the lymph vessels with subsequent destruction of tissue. It summoned the leucocytes with their bactericidal enzymes to the region, and distributed the bacteria throughout the circulation so that the entire army of phagocytes could act upon them. The threatening symptoms subsided without abscess formation, in four to five days, but he continued the massage for three weeks, once or twice a day, supplemented by an abundance of nourishing food to meet the extra demands on the blood-forming organs. The fever noticed after the first massage was probably from a chemical reaction due to the dissolving of the bacteria by the alexins secreted by the leucocytes.

Wiener Klin. Wochenschrift, February 28.

Experiences with Cinnamic Acid in the Treatment of Tuberculosis. Pollak and Hodlmoeser.—Pollak reports that in many cases treatment with cinnamic acid, according to Landerer's directions, had an unmistakably favorable effect on the entire course of the disease. It may prove a valuable aid in the treatment of tuberculosis in certain cases, he concludes, but, as a general thing, sanitarium treatment alone is fully as effective. He reports 48 cases of pulmonary tuberculosis thus treated. The results were that 66.7 per cent. were essentially improved, including 12.5 per cent. clinical recoveries, and 20.8 per cent. improved. No benefit was derived in 5 cases of intestinal tuberculosis. Two out of 9 cases of laryngeal tuberculosis were completely cured after the failure of other methods. Another was much improved by a combination of cinnamic and lactic acids. One out-patient with pulmonary tuberculosis was clinically cured by the treatment; another old chronic case, under the same conditions, was not influenced.

he remainder of the patients were inmates of the Alland sani- rium. Hodlmoeser reports 22.2 per cent. of essential im- rovement in 18 patients with pulmonary tuberculosis, includ- g 7 out-patients. Kraemer has collected 186 cases treated y Landerer's method. Of this number 81 were under treat- ent for more than four weeks, with positive results in 72.8 er cent. and negative in 27.2 per cent. Hodlmoeser agrees ith Ewald that the results to date of treatment with cinnamic cid encourage further trials.

Ziegler's Beitraege z. Allg. Path. (Jena), XXIX, 1.

Permeability of Granulating Tissue for Pathogenic Micro-organisms. A. Juergeluenas.—An aseptic, uninjured granulating surface proved a complete mechanical protection against penetration of bacteria in most of the tests reported. Bacteria placed on the granulating surface were not modified n the case of animals susceptible to infection, but on immune animals the bacteria were much altered by the secretions, and killed in the course of six hours. The animals who had not xperienced the slightest harm from anthrax bacilli placed on he granulating surface, rapidly succumbed when they were laced on a fresh wound or injected under the skin. The haracter of the dressings has no influence on the course of the nfection, but the healing processes are less rapid under an air-tight dressing.

Retroperitoneal Hernia. C. Abée.—At the autopsy on a man of 53, who had been received moribund at the hospital, a large hydronephrosis was found, coinciding with an enormous. complete retroperitoneal hernia. Eight of the fifteen similar cases that have been reported were cured by surgical interven- n; the prognosis is better the earlier the diagnosis. In this case the hernia protruded though Treitz's vascular ring, com- posed of the aorta, left colic artery and inferior mesenteric vein.

Zeitschrift f. Hyg. u. Infect. (Leipsic), XXXVI, 1.

Artificial Production of Immunizing and Curing Substance. R. Emmerich and O. Löw.—By the artificial cultivation of bacteria on a large scale, Emmerich and Löw have reaped an extensive harvest of the specific bacteriolytic enzyme which is produced when bacteria are developing on a suitable culture-medium or in the animal organism. The combination of this enzyme with the albumin of the blood or organs, produces the actual, specific immunizing and curative substance, the immun-proteidin, as it is called. They have succeeded in manufacturing this substance on a large scale for swine plague and anthrax. The immunizing and curative results obtained with it have been so successful that they proclaim this agricultural method of obtaining the specific remedy destined to supplant serotherapy for infectious diseases. The medium must require weeks and months. instead of days, for the bacteria to develop in it, in order that the harvest of enzymes reaped may be as abundant as possible. The mixture found most satisfactory is a combination of asparagin, .8 gm.; pepton sicc., 10 gm.; potassium-sodium tartrate, .8 gm.; sodium bicarbonate, 1 to 2 gm.; potassium biphosphate, 2 gm.; magnesium sulphate, .15 gm.; sodium chlorid, 3 gm.; bouillon, 100 gm., and aq. dest., 1000 c.c. The bacilli of swine plague grow slowly on this medium and produce the enzyme, "erysipelase," in abundance. The culture-medium for the bacillus pyocyaneus is nearly the same, omitting the peptone, bicarbonate, tartrate and bouillon and adding sodium acetate. They state that the "pyocyanase" thus derived is a certain cure for anthrax, destroys diphtheria and typhoid bacilli. and it is possible to cure an otherwise fatal intoxication in guinea-pigs by repeated subcutaneous injections of this pyocyanase solution. The media are sown in pint or quart vessels and kept at 25 C., and later at 30 to 37 C. After four or five weeks they are shaken several times a day, and then, after a day's rest, the fluid is aspirated and filtered through a Berkefeld filter. The albumin is added, in the form of fresh beef blood or ground spleens, with .3 per cent. sodium oxalate and .4 per cent. caustic potassium or .3 per cent. potassium carbonate. The mixture is kept at 37 C. for six to eight hours. The finished immun-proteidin thus obtained is a highly molecular, trypsin-proof albuminoid. It is precipitated with ten times the amount of absolute alcohol and made into a powder. The enzyme is also a powder and has been kept for two years without losing any of its properties. The particles of spleen show marked agglutination at first, as in the Widal test.

Gazetta degli Ospedali (Milan), February 24.

Primary Syphilitic Pleurisy. N. De Dominicis.—A syphilitic origin was retrospectively evident in seven cases of primary pleurisy in this writer's experience during the last five years. It was distinguished by its chronic course, commencing with extensive effusion and becoming later extremely hyperplastic, by the absence of high or continuous fever and of acute pains, although there were dull, diffuse pains and progressive dyspnea. This chronic phlogosis may last for years, entailing progressive cachexia, although never severe as in case of a malignant tumor. The affection is rebellious to all ordinary measures, but promptly subsides under mercurial treatment. One of his patients refused to acknowledge syphilitic infection and rejected specific treatment, but the slowly progressive cachexia and dyspnea for three years finally compelled him to yield, and ten injections of succinamid of mercury produced marked improvement, while fifty more cured him completely.

Talma's Operation for Ascites. T. Pozzan.—Ascites accompanying hepatic cirrhosis has been treated, by Talma, by the production of peritoneal adhesions and the fixation of the omentum to the abdominal wall, all for the purpose of establishing collateral circulation. This procedure has been employed in 18 cases by various surgeons, with 5 deaths, 7 patients cured of the ascites, and 6 unmodified by the intervention. Death occurred as the result of shock, peritonitis, interstitial nephritis or marasmus. All the patients operated on were affected with atrophic cirrhosis, and in all the successful cases the general health was improved and the spleen reduced in size, besides the abolition of the ascites. The operation is especially indicated for young subjects in the early stages of the affection, before the liver cells have lost their vitality. It is contraindicated in case of icterus, urobilinuria, acholia or hypocholia. It is by no means a radical cure of atrophic cirrhosis of the liver, but its harmlessness and the successes obtained in certain cases with it justify its more general adoption. A personal case is described, operated on in an advanced, chronic stage of the affection. Improvement was apparent for a time, but the affection continued its course till the patient's death, eleven months later.

Cirugia Contemporanea (Mexico), 1, 1.

Spinal Cocainization. J. Villarreal.—Four cases are cited in which gynecologic operations were performed under the influence of spinal injections of .75 to 1 c.c. of a 2 per cent. solution of cocain. In all but one case the patient complained of pain on traction of the peritoneum, and the anesthesia was completed with a small amount of chloroform. Villarreal suggests that the injection of cocain might be fully as effective for operations on the lower limbs, if made in the cauda equina, while the danger of injuring the cord would be avoided.

Books Received.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interest of our readers.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Second Edition. Revised and Largely Rewritten. Vol. II. Fevers—Diseases of the Respiratory and Circulatory Systems—Diseases of the Digestive System and Kidneys—Nervous Diseases and Diseases of the Skin. With Illustrations. Cloth. Pp. 926. Price, $5.00 net. Philadelphia and New York: Lea Brothers & Co. 1901.

A Treatise on the Diseases of the Ear, Including the Anatomy and Physiology of the Organ. Together with the Treatment of the Affections of the Nose and Pharynx Which Conduce to Aural Disease. By T. Mark Hovell, F.R.C.S. Edin., M.R.C.S. Eng., Aural Surgeon to the London Hospital. Second Edition. Cloth. Pp. 808. Price, $5.50. Philadelphia: P. Blakiston's Son & Co. 1901.

Hypnotism. A Complete System of Method, Application and Use, Prepared for the Self-Instruction of the Medical Profession. By L. W. De Laurence. Instructor at the School of Hypnotism and

Suggestive Therapeutics, Pittsburg. Illustrated. Cloth. Pp. 256. Price, $1.50. Chicago: The Henneberry Co.

Transactions of the Iowa State Medical Society. Volume XVIII. Forty-ninth Annual Session, 1900. Cloth. Pp. 442. Waterloo, Ia.: Geo. C. Hubbs.

The Medical Missionary Society in China. Annual Report for the Year 1900. Paper. Pp. 33.

Proceedings of the Pathological Society of Philadelphia. March, 1901. Paper. Published by the Society. 1901.

Oral Sepsis as a Cause of "Septic Gastritis," "Toxic Neuritis," and Other Septic Conditions. With Illustrative Cases. By William Hunter, M.D., F.R.C.P., Senior Assistant Physician, the London Fever Hospital. Cloth. Pp. 30. Price, 3/6. London, Paris, New York and Melbourne: Cassell & Co., Ltd. 1901.

Report of the Minister of Agriculture for the Dominion of Canada for the Year Ended October 31, 1900. Printed by order of Parliament. Paper. Pp. 131. Price, 15 cents. Ottawa: S. E. Dawson. 1901.

Sixth Biennial Report of the Board of Trustees of the Delaware State Hospital at Farnhurst. December, 1900. Paper. Pp. 109. Wilmington, Del.: Sunday Star Print. 1900.

Annual Report of the Department of Health, City of Niagara Falls, N. Y., for the Year 1900. Submitted by James H. Meehan, M.D., Health Officer. January, 1901. Paper. Niagara Falls, N. Y.: Cataract Journal Co. 1901.

Cyclic Albuminuria. By G. A. Sutherland, M.D., Physician to Paddington Green Children's Hospital. Paper. Pp. 63. Price, 2s 6d net. London: Clinical Journal Office. 1900.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, War Department, Washington, D. C., March 7 to 13, 1901, inclusive:

Charles Anderson, captain and asst.-surgeon, Vols., recently appointed, to proceed from Fort Brown, Tex., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Robert W. Andrews, lieutenant and asst.-surgeon, 46th Infantry Vols., honorably discharged from the service of the United States, to take effect March 17, 1901.

John E. Bingham, acting asst.-surgeon, now at Walla Walla, Wash., to duty at Fort Walla Walla, relieving Major Walter Whitney, surgeon, Vols.

Joseph K. Combe, acting asst.-surgeon, now at Brownsville, Tex., to duty at Fort Brown, Tex.

Frederick A. W. Coon, acting asst.-surgeon, leave of absence granted.

William H. Corbusier, major and surgeon, U. S. Army, member of a board at Governor's Island, N. Y., to examine officers of the army for promotion.

Frederick W. Cox, captain and asst.-surgeon, Vols., recently appointed, from Vermillion, S. D., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

J. B. Cutter, acting asst.-surgeon, leave of absence from the Department of California extended.

J. Ryan Devereux, acting asst.-surgeon, member of a board at Washington Barracks, D. C., to examine officers of the army for promotion.

Frank A. E. Disney, captain and asst.-surgeon, Vols., recently pointed, to proceed from Chicago, Ill., to San Francisco, Cal., en tion to Manila, P. I., and subsequent assignment in the Division of the Philippines.

Gerry S. Driver, captain and asst.-surgeon, Vols., recently appointed to proceed from Chicago, Ill., to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Richard M. Fletcher, Jr., acting asst.-surgeon, leave of absence from the Department of Dakota extended.

John S. Fogg, acting asst.-surgeon, leave of absence granted.

Ernest W. Fowler, acting asst.-surgeon, from New York City, N. Y., to duty at Fort Preble, Me.

Francis A. Halliday, acting asst.-surgeon, member of a board at Fort McPherson, Ga., to examine officers of the army for promotion.

Harry M. Hallock, captain and asst.-surgeon, U. S. Army, member of a promotion board at Fort McPherson, Ga.

Paul C. Hatton, lieutenant and asst.-surgeon, U. S. Army, recently appointed, to duty at Fort Thomas, Ky.

James S. Kennedy, captain and asst.-surgeon, Vols., recently appointed, to proceed from Fort Sam Houston, Tex., to San Francisco, Cal., en route to Manila, P. I., for assignment in the Division of the Philippines.

Frank P. Kenyon, captain and asst.surgeon, Vols., recently appointed, to proceed from Joplin, Mo., to San Francisco, Cal., en route for duty in the Division of the Philippines.

John S. Kulp, major and surgeon, Vols., from the Division of the Philippines to duty at Fort Hancock, N. J.

Harry A. Littlefield, captain and asst.-surgeon, Vols., recently appointed, to proceed from Portland, Oregon, to San Francisco, Cal., en route for duty in the Division of the Philippines.

James C. Merrill, major and surgeon, U. S. Army, member of a board at Washington, D. C., to examine officers of the army for promotion.

George H. Penrose, major and surgeon, Vols., sick leave from the Department of California extended.

Arlington Pond, major and surgeon, Vols., recently appointed, to duty at Fort Preble, Me.; subsequent orders relieve him from this duty, grant him leave of absence, on the expiration of which he is directed to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

Samuel O. L. Potter, major and surgeon, Vols., recently appointed and now in San Francisco, Cal., to report for transportation to Manila, P. I., and for assignment in the Division of the Philippines.

Dwight B. Taylor, captain and asst.-surgeon, Vols., recently appointed, to proceed from Columbus Barracks, Ohio, to San Francisco, Cal., en route to Manila, P. I., for assignment in the Divisio of the Philippines.

Ira A Shimer, lieutenant and asst.-surgeon, U. S. Army, forme orders relieving him from the Department of Cuba and assignin him to duty at Fort Columbus, N. Y., revoked.

Justus M. Wheat, acting asst.-surgeon, leave of absence granted

Ernest H. Wheeler, captain and asst.-surgeon, Vols., recentl appointed, to proceed from Rockland, Me., to San Francisco, Cal. en route for assignment in the Division of the Philippines.

Walter Whitney, major and surgeon, Vols., recently appointed to duty at Fort Walla Walla, Wash.

Allie W. Williams, lieutenant and asst.-surgeon, U. S. Army member of a board at Governor's Island, N. Y., to examine officer of the army for promotion.

Charles K. Winne, major and surgeon, U. S. Army, from For Porter, N. Y., to Washington, D. C., for consultation with th surgeon-general on official business pertaining to the exhibit of th medical department of the army at the Pan-American Expositio at Buffalo, N. Y., returning thereafter to his proper station.

Leonard Wood, brigadier general, U. S. Army, resignation of hi commission as captain and asst. surgeon, U. S. Army, accepted b the President, to take effect March 2, 1901, the date of his accept ance of his commission as brigadier-general, U. S. Army.

Robert H. Zauner, major and surgeon, Vols., from Fort Du Pont Del., to San Francisco, Cal., en route to Manila, P. I., for dut in the Division of the Philippines.

Navy Changes.

Changes in the Medical Corps of the Navy for the week ende March 16, 1901:

Surgeon O. Diehl, ordered to the *Indiana,* March 15.

Asst.-Surgeon R. K. McClannahan, detached from the *Indiana* and ordered home to wait orders for sea duty.

Asst.-Surgeon O. M. Eakins, resignation accepted to take effect April 15, 1901.

Pharmacist H. T. Morse, detached from the Boston Navy Y[illegible] and ordered to the *Michigan.*

Pharmacist I. N. Hurd, detached from the *W[illegible]ash* and order[illegible] to the Boston Navy Yard.

Health Reports.

The following cases of smallpox, yellow fever, cholera and [illegible] have been reported to the Surgeon-General, U. S. Marine-H[illegible] Service, during the week ended March 16, 1901:

SMALLPOX—UNITED STATES.

Alabama: Mobile, March 2-9, 1 death.
California: Feb. 24-March 2, Los Angeles, 5 cases; Oa 1 case; Sacramento, 1 case.
Illinois: Chicago, March 2-9, 7 cases.
Indiana, Evansville, Feb. 24-March 9, 2 cases.
Kansas: Wichita, March 2-9, 23 cases.
Kentucky: Lexington, March 2-9, 1 case.
Louisiana: New Orleans, March 2-9, 14 cases, 3 deaths.
[illegible] -9, Lowell, 1 case; Somerville, 1
" [illegible] etroit, 1 case; Grand Rapids, 1 ase
" [illegible] Feb. 24-March 2, 4 cases; [illegible] March 2-9, 2 cases.
Nebraska: South Omaha, Dec. 28-Feb. 5, 5 cases.
New Hampshire: Manchester, March 2-9, 21 cases.
New York: New York, March 2-9, 54 cases, 10 deaths.
Ohio: Cincinnati, March 2-9, 2 cases; Cleveland, March 2-[illegible] 52 cases; Dayton, Nov. 2-9, 1 case.
Oregon: Portland, Feb. 1-28, 2 cases.
Pennsylvania: March 2-9, Erie, 2 cases; Philadelphia, 1 case Steelton, 1 case.
Tennessee: Jackson, Jan. 1-31, 20 cases, 2 deaths; Memphis March 2-9, 10 cases; Nashville, March 2-9, 11 cases: San Antonio Feb. 1-28, 16 cases.
Utah: Ogden, March 2-9, 18 cases.
Washington: Tacoma, Feb. 25, 6 cases.
West Virginia: Huntington, March 2-9, 11 cases: Wheeling Feb. 24-March 9, 4 cases.
Wisconsin: Milwaukee, March 2-9, 2 cases.

SMALLPOX—FOREIGN AND INSULAR.

Austria: Prague, Feb. 9-23, 14 cases; Vienna, Feb. 16. 23 1 death.
Belgium: Antwerp, Feb. 9-23, 2 cases.
Canada: Ontario, Sudbury, Feb. 22, prevalent.
Ceylon: Jan. 26-Feb. 2, 1 case, 1 death.
Egypt: Cairo, Jan. 28-Feb. 4, 2 cases.
Great Britain: England—London, Feb. 16-23, 1 case; Newcastle on Tyne, Feb. 16-23, 1 case. Scotland—Dundee, Feb. 16-23 2 cases; Edinburgh, Feb. 16-23, 1 case; Glasgow, Feb. 22-March 1 13 deaths.
India: Bombay, Jan. 29-Feb. 12, 6 deaths; Calcutta, Jan 26-Feb. 9, 235 deaths; Karachi, Jan. 27-Feb. 10, 15 cases, 7 deaths Madras, Jan. 26- Feb. 8, 8 deaths.
Italy: Naples, Feb. 20, *present.*
Malta: Feb. 16-28, 1 case.
Mexico: Yucatan, Progreso, Feb. 19-28, 16 cases, 4 deaths.
Philippines: Manila, Jan. 5-19, 4 cases.
Russia: Moscow, Feb. 2-16, 10 cases, 1 death; Odessa, Feb 8-23, 26 cases 7 deaths; St. Petersburg, Feb. 8-16, 7 cases, 1 death Warsaw, Feb. 8-16, 6 deaths.

YELLOW FEVER.

Colombia: Jan. 7, Honda, epidemic; Guaduas, epidemic.
Cuba: Cienfuegos, March 4, 1 death; Havana, Feb. 25-March 4, 2 cases, 1 death.
Mexico: Vera Cruz: Feb. 16-23, 2 cases.

CHOLERA.

India: Bombay, Jan. 29-Feb. 12, 12 deaths: Calcutta, Jan 26-Feb. 9, 33 deaths; Madras, Jan. 26-Feb. 8, 22 deaths.
Straits Settlements: Singapore, Jan. 12-26, 35 deaths.

PLAGUE—FOREIGN AND INSULAR.

Africa: Cape Town, Feb. 16-26, 44 cases, 6 deaths.
China: Hongkong, Jan. 19-26, 2 cases, 2 deaths.
India: Bombay, Jan. 29-Feb. 12, 1711 deaths: Calcutta, Jan 26-Feb. 9, 176 deaths.
Philippines: Manila, Jan. 5-19, 2 deaths.
[illegible]